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OMAHA EARTH LODGES

American Anthropologist

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NO. 1

THE EARTH LODGE IN ART

By WASHINGTON MATTHEWS

Art is the child of Nature; yes,
Her darling child; in whom we trace
The features of the mother's face.—*Longfellow.*

Thus the poet sings; but the prosaic man of science often finds that the child does not resemble the mother as closely as might be desired.

Art should be an aid to all sciences, especially to the science of ethnography; but I regret to say it is often employed in a way to diminish the value of the associated record, to lead the student astray rather than to aid him. Such transgressions on the part of art might have found some excuse before the invention of photography and of process engraving; but it is hard for us to pardon them in these days when illustration might be made absolutely accurate. The errors of art have been somewhat lessened of late years; but they are still numerous enough to give the conscientious investigator many a painful experience. He who poses a subject for the camera often has theories with regard to the fitness of things which are at variance with fact, and introduces incongruous elements into his composition. The artist who paints in

black and white or draws in pen for the process, is rarely pleased with nature as he sees it; he has theories of art which must be satisfied at any cost; he has ideas of what would look well that must be fulfilled.

I might cite from memory numerous instances of art thus violating truth; but in this paper I shall confine my remarks to misrepresentations which art has made of the earth lodge. Before doing this, it is necessary to show the true form of the structure.

By the term earth lodge, I refer to certain large houses inhabited by the Indians of the Missouri valley within the nineteenth century. Dr Lewis H. Morgan says of such dwellings that they were the most commodious aboriginal houses found in America,¹ north of New Mexico. Most of them were from 40 to 60 feet in diameter, and Henry, as early as 1807, measured one in the Mandan village that was 90 feet in diameter.² The form of lodge most common among the Omahas is shown in the upper figure of plate I; it has slanting walls and a conical roof. Among all the tribes the walls slanted, but among the Mandans and some other tribes the roof was occasionally flattened at the top. It was a truncated, not a perfect, cone. Such was the roof of the house that Henry describes as seen in 1807.

The lower figure of plate I represents another Omaha lodge, and shows in front the drying-frame or scaffold on which the Indians dried corn, meat, and other articles of food. These two illustrations were furnished by Miss Alice C. Fletcher and are copied from photographs, made fifteen or twenty years ago, of lodges that no longer exist.

In plate II, fig. 1, is shown a lodge of recent construction, probably still standing, near Elbowoods, North Dakota. I obtained this view and the next some five years ago, from Mr A. W. Moses, of that place, after many months of correspondence with various persons. Although occupied as a residence, it was

¹ *Johnson's Encyclopedia*, 1st edition, vol. 1, p. 220.

² *Henry and Thompson Journals*, Coates edition, vol. 1, p. 338.



f. Lodge of "Kidney," Grosventre Indian, Fort Berthold Reservation, North Dakota, 1897.



g. Earth lodge, Fort Berthold Reservation, North Dakota, 1897.

MODERN EARTH LODGES

also used for ceremonial purposes, and this was, no doubt, the chief reason for its existence. Its occupants, a family of Hidatsa Indians, were the custodians. This view, being from the front, does not well display the entry. The drying frame, being also in front, as usual, keeps us from seeing properly the form of the lodge, but it seems to be of the pointed variety. It was a small, degenerate, poorly-built specimen, not to be compared with the best lodges of thirty years ago. It was 42 feet in diameter inside.

In plate II, fig. 2, is shown another modern lodge which recently stood, or is still standing, near Elbowoods, and which I believe to be the Mandan medicine-lodge, although my correspondent does not say so. In general, the remarks made about the preceding picture apply also to this; but there are some additional features of interest. Leaning against the drying-frame we see a notched log. This is an old-fashioned ladder, such as these Indians used almost exclusively thirty years ago. In the meantime many of the young men have been taught carpentry in the industrial schools of the East and the government has supplied them with plenty of tools for woodwork; yet the Indians cling to the rude ladder of their savage days. At one side of the lodge may be observed a number of poles bearing rag effigies. These are survivals of the poles sketched by Catlin in 1832, to which I shall call attention when describing plate VI. I saw such poles in the Mandan village in 1865 and later. Nearly seventy years have passed since Catlin drew his picture; meantime the Mandans have been nearly exterminated by war and disease; the survivors have been, it is reported, christianized and civilized, but there still stand the votive effigies of the ancient days. Truly "Ephraim is joined to idols; let him alone." Catlin depicts four poles; this picture shows sixteen.

From the Rev. Charles L. Hall, of Elbowoods, North Dakota, I have received two views, internal and external, of the ruins of the old medicine-lodge of the Arickarees at Fort Berthold village, now abandoned. The lodge was 80 feet in diameter and

was a superior specimen of this kind of structure. I spent many an evening in such a lodge, in the autumn of 1865, witnessing the public dances and feats of legerdemain of the Indians and listening to their songs. The interior is shown in plate III; the lady seen standing near the center and reaching high with her hand scarcely touches the middle of one of the great supporting posts. There are here four central posts, and such was the usual number in the houses of the north. Miss Fletcher has shown that a different number prevailed farther south. The reasons for this difference may be mythic rather than practical. The external view sent by Mr Hall is too dim for reproduction.

Plate IV, fig. 1, shows an Arickaree earth lodge of large size used as a dwelling at the Fort Berthold village between 1870 and 1880. It was the residence of the celebrated interpreter, Pierre Garreau.

In comparing the pictures of the lodges of the Fort Berthold Indians (plates II and IV) with those of the Omaha (plate I) we observe something in the former which is not in the latter—a series of stringers or horizontal poles at what may be called the eaves, supported by short, forked poles which lean against the walls. This addition is due to a difference in climate. In the moist lands of the Omaha, in eastern Nebraska, where there is an abundant rainfall, a good sod is easily obtained to cover the houses, and this sod takes root and thrives on the house-tops, thus helping to retain the covering; whereas, in the arid climate of western North Dakota, such a permanent covering of sod cannot be secured, and the stringers are placed to keep the earth-covering of the roof from sliding down.

In the early years of the last century, the earth lodge was found by travelers among various tribes of different linguistic stocks in the territory now forming the states of North Dakota, South Dakota, Nebraska, and Kansas, and there were thousands of such dwellings in the land. There is archeological evidence that, at an earlier period, they existed in the Mississippi valley as



INTERIOR OF ABANDONED ARICKAREE DANCE LODGE.

far south as Louisiana and as far east as East Tennessee. Now there are probably only five or six in existence, and these are confined to the Fort Berthold reservation in North Dakota. They seem to be no longer used for dwellings only, but for ceremonial purposes by the few Indians who still cling to the old pagan cultus. On topographical maps of the region they are called dance-houses.

In a former work¹ I thus speak of the old Mandan lodge as I first saw it nearly thirty-seven years ago: "Each one of these lodges consists of a wooden frame covered with willows, hay, and earth. A hole in the top, which lets in the light and lets out the smoke, and a doorway on one side are the only apertures in the building. The door is made of raw-hide stretched on a frame, or of puncheons, and it is protected by a narrow shed or entry six to ten feet long. Over the smoke-holes of many of the lodges are placed frames of wicker-work, on which skins are spread to the windward in stormy weather, to keep the lodges from getting smoky. Sometimes bull-boats are used for this purpose. On the site of a proposed lodge, they often dig down a foot or more, in order to find earth compact enough to form a good floor; so, in some lodges, the floors are lower than the general surface of the ground on which the village stands. The floor is of earth and has in its center a circular depression for a fire-place, about a foot deep and three or four feet wide, with an edging of flat stones."

I now call attention to one marked feature of the earth lodge, shown in some of the preceding pictures; this is the long passage, entry, or storm-door,—the Eskimo doorway, as Morgan designates it. Beginning with Lewis and Clark, in 1804, this feature is mentioned by nearly all writers and seems to have been used by all tribes who built the earth lodge. My own recollection of the lodges of the Mandans and contiguous tribes, as I saw them between the years 1865 and 1872, is that in no case was this passage ever absent. It was a constant or nearly constant feature.

¹ *Ethnography and Philology of the Hidatsa Indians*, Washington, 1877, p. 4.

Plate IV, fig. 2, from a photograph also furnished by Miss Fletcher, shows us the passage or entry of an Omaha earth lodge.

The earliest account of the earth lodge is that written by Lewis and Clark in 1804.¹ From this description one would form the idea that the lodge they occupied in the Mandan village was of the pointed form, but their description is vague. The next account we find is that of Alexander Henry in 1807,² and it is one of the best ever written. From this it is evident that the lodge in which he was quartered, in the Mandan village, on the banks of Knife river, in what is now North Dakota, in the first decade of the last century, was flattened at the summit. Both Lewis and Henry mention the passage, but neither furnishes an illustration of the lodge.

The earliest pictures of the earth lodge are those by George Catlin, painted in 1832 and copied in outline in his first work.³ While Catlin is often remarkably correct in other matters, he fails in his delineation of this dwelling, although he has occasion to draw it a hundred times or more, and his descriptions are as vague and erroneous as his pictures. In his eagerness to immortalize the wonderful things he saw among the people themselves, he glanced but too hastily at their dwellings. In all his drawings of the lodge, he represents it externally as almost an exact hemisphere, and he makes the height too great in proportion to the width. He seems to have adopted the hemisphere as a convenient symbol for the lodge, and he always omits that important feature, the passage or entry.

Plate V shows Catlin's⁴ accurate and spirited picture of a part of the "Okeepa," or great annual ceremony of the Mandans. Of the correctness of this scene I can vouch from personal observation. Here all is carefully delineated except the lodges; as regards them, the errors I have mentioned are to be observed.

¹ *Journal of Lewis and Clark, etc.* Dayton, Ohio, 1840.

² *Journal*, vol. I, p. 338.

³ *North American Indians*, sixteen plates in vol. I.

⁴ *Ibid.*, pl. 67.



1. An Archaean earth lodge.

(From *The Monthly South Dakotan*, Sioux Falls, Nov., 1900.)



2. Passage or entry of Omaha lodge.

EARTH LODGES



The next illustration¹ (plate VI) reproduces another scene from the Okeepa. In it is shown the Mandan medicine-lodge, the sacred poles, and the symbol of the ark in which the Mandan Noah was saved from the flood. Here again we see a number of hemispherical outlines, and again the long entry is not to be seen. But here we behold (as in plate V) the long poles tipped with



FIG. 1.—Mandan game of chung-kee, with village in the distance (after Catlin).

effigies, similar to those shown in plate II, fig. 2, which represents, it is believed, the medicine-lodge of today.

Figure 1 shows a group of Mandans engaged in the game of *chung-kee*, or roulette, after Catlin. Their stockaded village is indicated in the distance by a number of hemispheres seen over a row of black lines which represent palisades.

Such is the width of the Mandan lodge, in comparison to its height, and so obtuse are the angles of the pentagon, or hexagon, that its outline in some cases might seem to be the arc of a circle

¹ *North American Indians*, pl. 69.

to a casual observer; but as Catlin spent several weeks in the Mandan villages, painting these lodges, we can hardly pardon his carelessness.

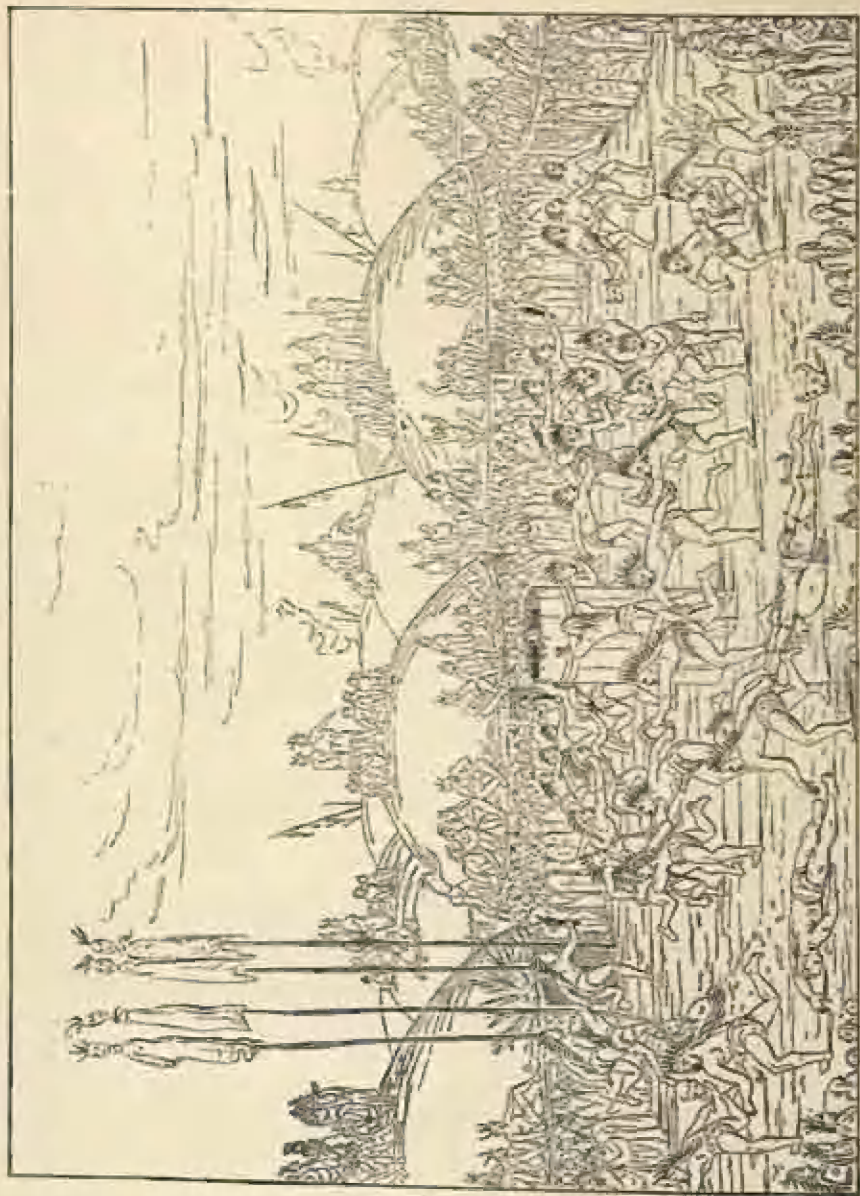
Yet, in his interiors, Catlin shows the roof as conical instead of flat or rounded. The view presented in plate VII is a picture of an act in the Okeepa which was esoteric and occurred inside the Mandan medicine-lodge. Here we see the lodge represented as consisting of sections of three cones, one above another, yet it is the same medicine-lodge that is shown with a rounded top in plates V and VI. We have no evidence that an earth-lodge structure of three cones, or rather of two frustums and one complete cone, was anywhere to be found.

In plate VIII is given another view of the same Mandan medicine-lodge, during the secret ceremonies of the last day of the Okeepa. Here again the space between the four central beams is depicted as covered with a conoidal arrangement of sticks, which are not continuations of the main rafters of the roof. Such an arrangement of roof timbers I never saw, and indeed it would be impracticable to construct it.

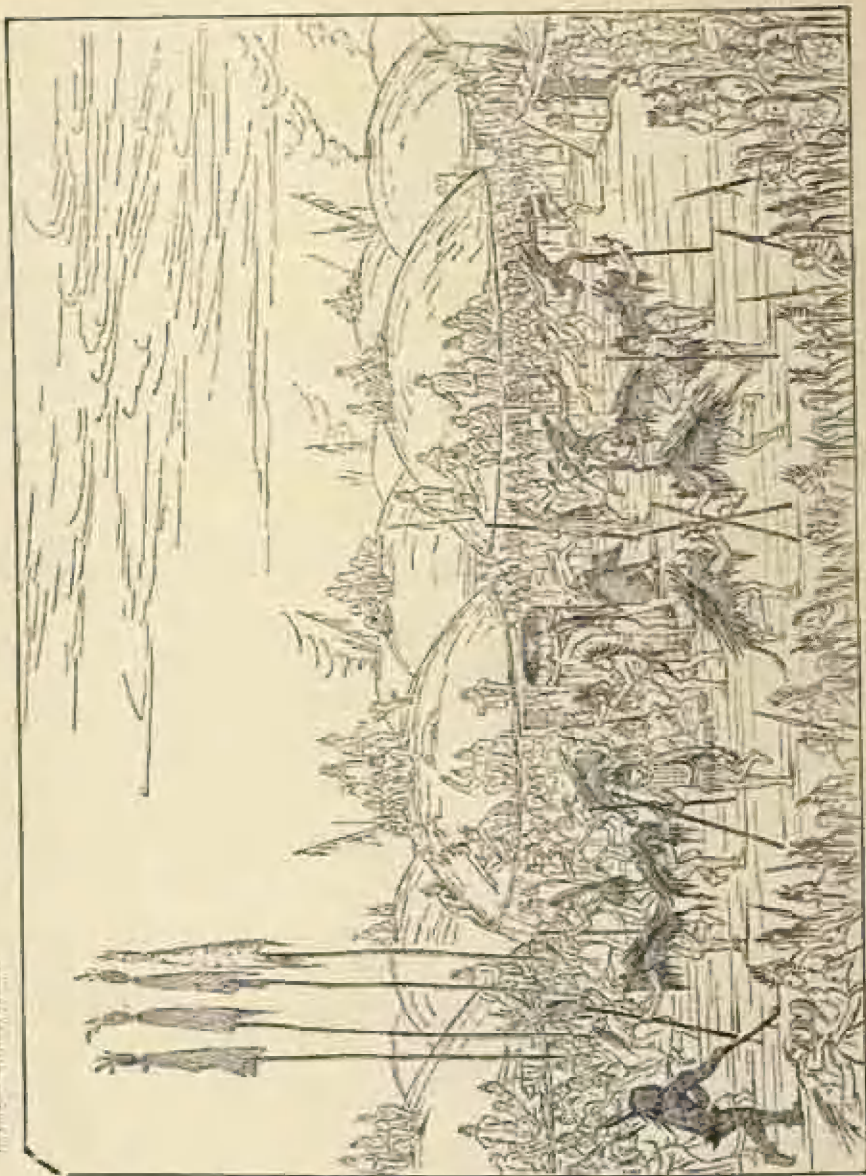
If a famous ethnographer and artist, illustrating his own work, makes such errors as I have shown, we need not expect a very accurate representation from an artist who never saw an earth lodge. Our next illustration (plate IX, fig. 1) is evidently taken far from the field of action. It is intended to portray earth lodges of Kansa or Kaw Indians situated somewhere in what is now the state of Kansas. It is culled from a book written by Father De Smet,¹ a famous western missionary, some fifty years ago. The reverend author's description of the lodges is very sketchy, and we scarcely blame the artist for getting some distance away from the truth; but we do blame him for aiding his imagination with books of African travel, as he seems to have done in this case.

But his extraordinary achievements in delineating the exterior

¹ *Letters and Sketches*, Philadelphia, 1843, opp. p. 65.



VIEW IN MANDAN VILLAGE IN 1832 DURING OKEEPA CEREMONY. (AFTER CATLIN.)



VIEW IN MANDAN VILLAGE IN 1832, SHOWING MEDICINE LODGE AND SACRED POLES. (AFTER CATLIN)

of the lodge are even excelled by his picture of the interior (plate IX, fig. 2). It is true that the author speaks of the "dome-like" appearance of the lodge, and, taking this as his guide, the artist seems to have drawn his inspiration from the old dome of the Capitol at Washington, or some similar structure. Those regular and symmetrically shaped rafters, that beautifully rounded smoke-hole, that arched doorway, and those smooth circular seats could have been cut out only with a bandsaw or some other implement



FIG. 2.—Mandan earth lodge (after Maximilian).

of high civilization quite unknown to the Indians of the plains in Father De Smet's time.

A year after Catlin's journey (in 1833) Prince Maximilian of Wied ascended the Missouri and saw the earth lodges at the Mandan and Minnetaree villages on the banks of Knife river, in what is now North Dakota. His artist, Mr Bodmer, gives us the first truthful pictures of these houses ever published. He never omits the passage where he depicts the door. Figure 2 is reproduced from a wood engraving which appears in the text of the Prince's book.¹ The colored illustrations in his book of plates are equally faithful.

¹ *Travels in the Interior of North America*, London, 1843, p. 343.

The next person whose work I have to consider is none less than Lewis H. Morgan, one of the foremost of American ethnographers, the scholar who unraveled the mysteries of Indian kinship and the special student of Indian architecture. In the first edition of *Johnson's Encyclopædia* he contributes an article on "American Aboriginal Architecture," in which he devotes a reasonable space to the earth lodge, which he describes with fair accuracy. He claims to have seen the lodges, in a somewhat ruined condition, at Knife river, after the Mandans had aban-

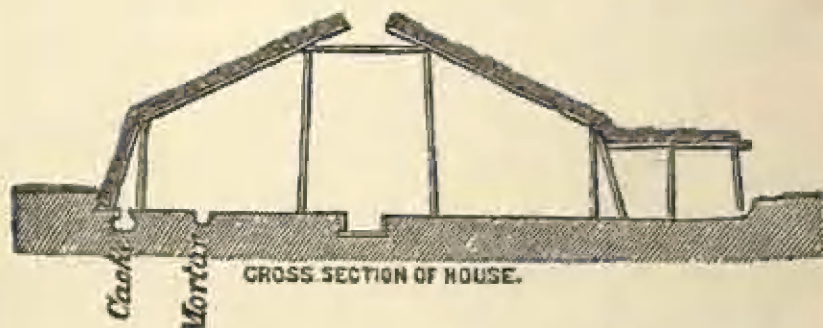
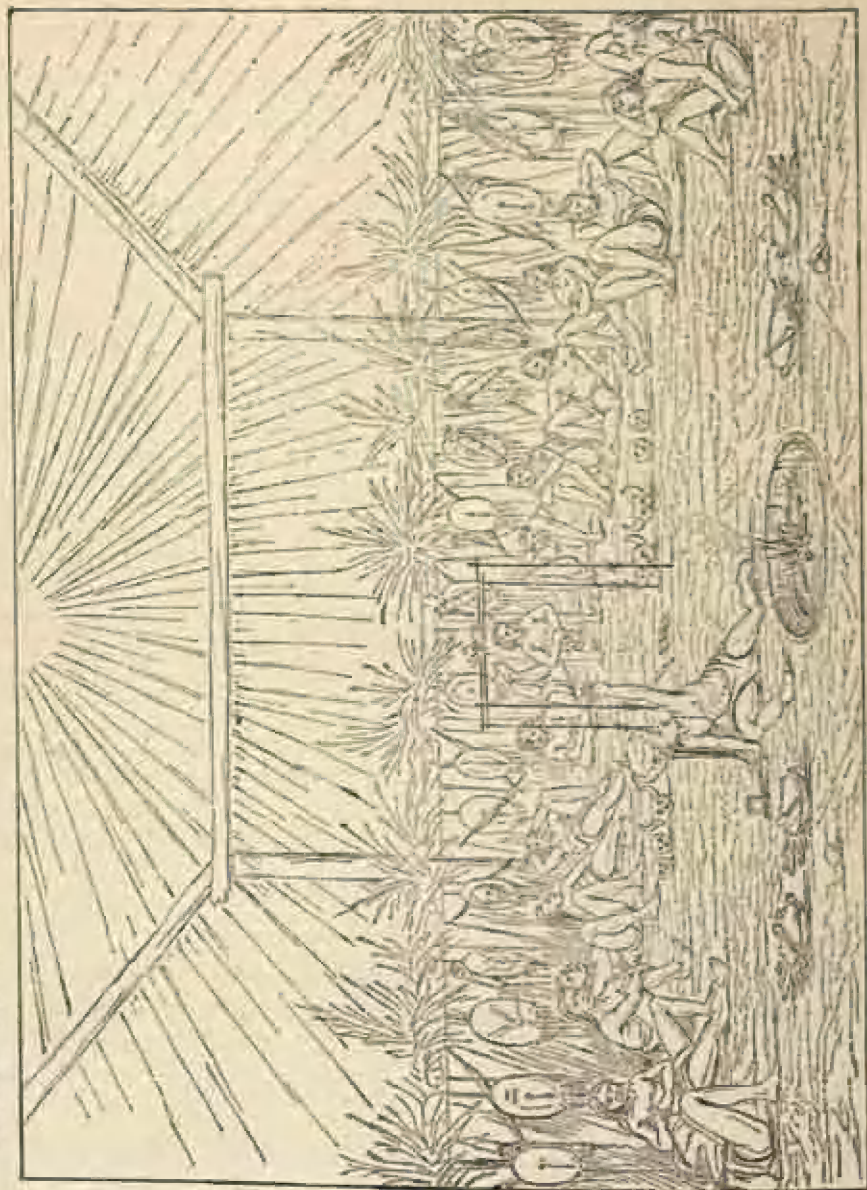


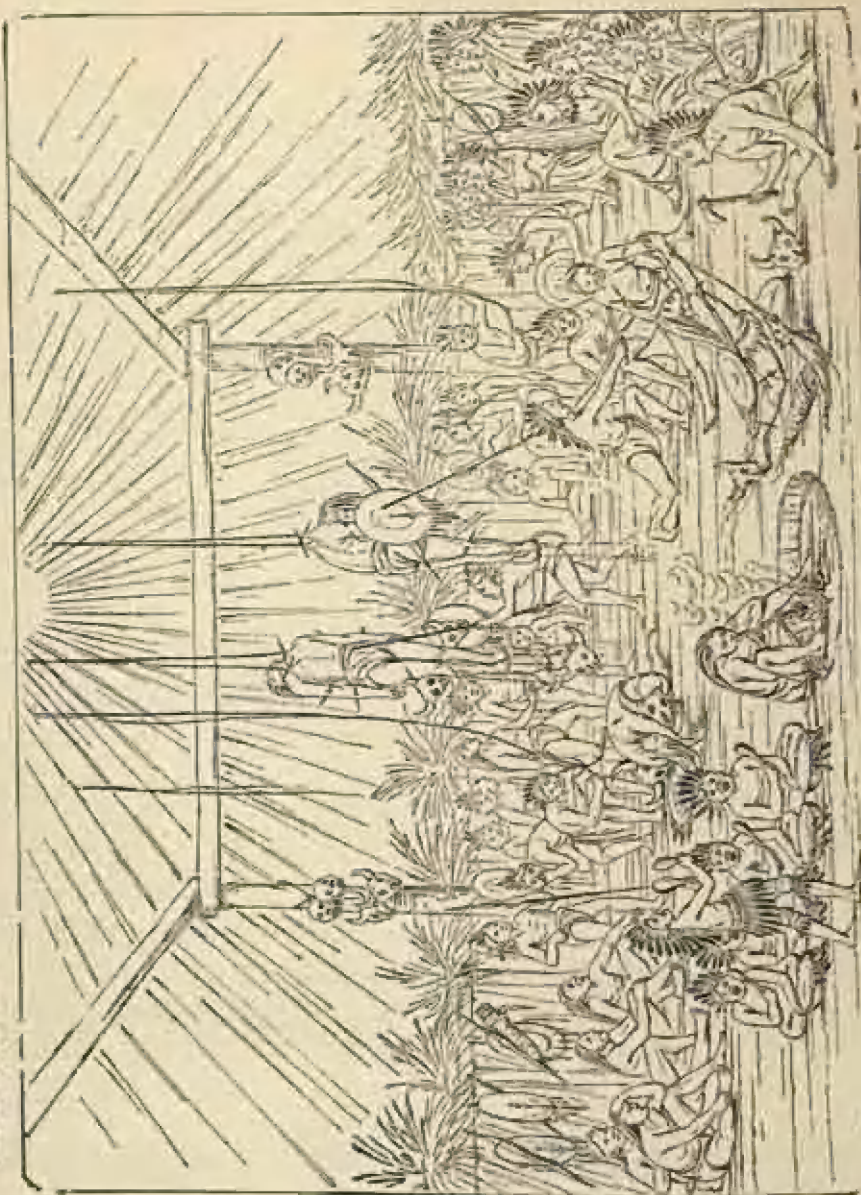
FIG. 2.—Cross-section of Mandan earth lodge (after Morgan).

doned that place in 1845, and to have made his illustrations from sketches and measurements taken there.

The picture shown in plate X, fig. 1, from Morgan's article, is fairly correct for the lodge with the pointed top, but it is rather diagrammatic than pictorial. The smoke-hole is too small, and I cannot determine what that frill or collar (or whatever we may call it) surrounding the lodge, as shown in the picture, is intended to represent. I never saw anything like it on one of these lodges. In the photographs of the inhabited houses here presented no such appendages are to be seen. Perhaps in some of the ruined lodges that Dr Morgan saw at Knife river, the earth covering may have been washed off at the eaves and the covering of willows underneath exposed; but the exposed parts could not have had such a regular form as is shown in the illustration.



INTERIOR OF MANDAN MEDICINE LODGE DURING OKEPA CEREMONY. (AFTER CATLIN)



INTERIOR OF MANDAN MEDICINE LODGE DURING WAKÉPA CEREMONY. (AFTER CATLIN)

Morgan's cross-section of the earth lodge is shown in figure 3, and for a lodge of the pointed type the picture is fairly correct. The flat-topped type differs from it only in this respect: The main rafters reach only as high as the four central beams, one of which is shown in the section, and the square space enclosed by these beams is covered with poles laid horizontally. The outline of the cross-section of the first type is pentagonal, that of the second type is hexagonal.

Figure 4 exhibits the ground-plan of an earth lodge according to Morgan; on the whole it is satisfactory.¹

In closing the description of the earth lodge in an earlier work, previously quoted, I say: "If, with the aid of steel axes obtained from the whites, the task of building such a house

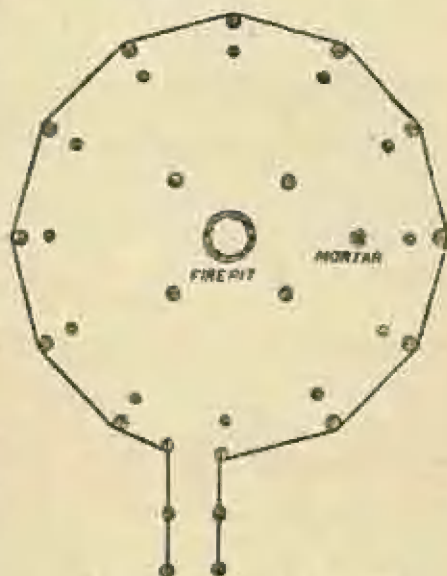


FIG. 4.—Ground-plan of Mandan earth lodge (after Morgan).

is no easy one at this day, how difficult it must have been a century ago, when the stone axe was their best implement and when the larger logs had to be burned through in order that pieces of suitable length might be obtained!" This thought is later echoed by Morgan,² who says: "Not the least interesting fact connected with these creditable houses was the quantity of material required in their construction and the amount of labor necessary for its transportation long distances down the river and to fashion it, with the aid of fire and stone implements, into such comfortable dwellings. To cut the timber without metallic implements and to

¹ *Johnson's Encyclopedia*, 1st ed., p. 220, fig. 8.

² *Ibid.*, p. 220.

transport it without animal power indicated a degree of persevering industry highly creditable to a people who are generally regarded as averse to labor." The great lodge described by Henry in 1807 was probably built before the Mandans possessed steel axes.

I once saw, in a missionary periodical, a picture of a hut of puncheons in northern California, which originally appeared in Powers' work on the California Indians,¹ doing duty as a picture of a Mandan lodge and duly labeled as such.

But the climax of illustrative genius is capped by the picture presented in plate X, fig. 2. In one edition of Lewis and Clark's travels, it appears labeled "fishing lodges" and is attributed to the Crees of British America. In one edition of Patrick Gass' journal, it is used to illustrate Arickaree earth lodges, and I think it must have been originally drawn by some enterprising artist to represent earth lodges, though no likeness to the latter can be traced. Sergeant Gass accompanied the famous expedition of Lewis and Clark from St Louis to the Pacific and back in 1804-06. No person of any artistic ability accompanied the expedition, and all early embellished editions of Lewis and Clark and of Gass were illustrated from imagination by eastern artists, and in all the work is most unskillfully performed, both in drawing and engraving. Here we have a picture of conical skin tents with the lodge-poles on the outside and in front of one of the tents a structure of poles looking like the frame of a summer arbor or a grapevine trellis; this probably was intended to represent the passage. I do not blame the artist much for getting some distance from the truth, for Sergeant Gass' description of the lodge is certainly very hazy. As I have said, this picture is made, in different works, to represent an Arickaree earth lodge and a Cree fishing lodge. Perhaps it has served other purposes, and in the hands of some enterprising publishers it might yet be made to answer for the Pyramids of Egypt or for Mount Ararat with the Ark in the foreground.

¹ *Contributions to North American Ethnology*, vol. III.



1. Earth lodges of the Kansas Indians (after De Smet).



2. Interior of Kansas earth lodge (after De Smet).



1. Mandan earth lodge (after Morgan).



2. Arickaree "earth lodges" (after Patrick Gass).

CHEYENNE WOMAN CUSTOMS

By GEORGE BIRD GRINNELL

The customs here set forth were given me by Cheyenne old women. They were a part of the old wild life of the buffalo days, and many of them have now passed out of use. In describing them, however, I have thought it better to use the present tense.

When a young girl reaches the age of puberty and has her first period, she of course tells her mother, who in turn informs the father. The girl unbraids her hair and bathes. She is then painted red over the whole body by older women. Then, covered with a robe, she sits near the fire, and a coal is drawn from it and put before her, and sweet grass, cedar needles, and white sage are sprinkled on it. The girl bends forward over the smoke and holds her robe about it, so that the smoke is confined and passes about her whole body. Then she and her grandmother leave the home lodge, and go into another small one near by, where she remains for four days.

Such an important family event as this is, of course, not kept secret, and among well-to-do people the father of the girl publicly announces from the lodge door what has happened and gives away a horse.

If there is no medicine, no sacred bundle, and no shield in her father's lodge, the girl may remain there; but if she does so, everything that has a sacred character—even the feathers that a man ties in his head—must be taken out.

At the end of the four days, her grandmother, taking a coal from the fire, and sprinkling on it sweet grass, juniper needles,

and white sage, has the girl stand over the smoke, with feet on either side of the coal, purifying herself. This is always done by young unmarried women.

For four days a woman in this condition must not eat boiled meat. Her meat must be roasted over coals.

Young men will not eat from the dish nor drink from the pot used by her; one who did so would expect to be wounded in his next fight. She may not handle nor even touch a shield or any other war implement, nor may she touch any sacred bundle or object. If the camp moves she may not ride a horse, but is obliged to ride a mare. Women in this condition are careful to avoid entering a lodge where there is a medicine bundle or bag. To do this is supposed to cause an increased flow. Some women have almost bled to death from this cause. For four days women do not go out to walk about much. They spend almost all their time in the lodge.

A married woman during this time does not sleep at home, but goes out and sleeps in one of the menstrual lodges. Men believe that if they lie beside their wives at this time they are likely to be wounded in their next battle.

The owner of a shield is obliged to use special care in relation to menstruating women. He must not go into a lodge where one is, nor even into a lodge where one has been, until a ceremony of purification has been performed. If the woman thoughtlessly visits the lodge of a neighbor, no shield owner may enter it until sweet grass and juniper leaves have been burned in the lodge and the pins have been removed and the lodge covering thrown back, as if the lodge were about to be taken down. Then the covering may be thrown forward again, and pinned together. The lodge is now purified and the shield owner may enter.

After a girl has been married and has gone to her husband's lodge, she may still make use of the protective string for a period of from ten to fifteen days. The husband will respect

the string for that length of time, but usually not longer. The Cheyennes say that this custom had the advantage of enabling the newly married couple to get used to each other, to sleeping together. Men tell me that they used to lie awake almost all night, talking to their newly married wives.

It has long been the custom that a woman should not have a second child until her first is ten years old. When that age is reached, the man is likely to go with his wife and child to some large dance or public gathering, and there, giving away at the same time a good horse to some friend or even to some poor person, to announce publicly that now this child is going to have a little brother or sister. To be able to make such an announcement is a great credit to the parents. The people talk about it and praise the parents' self-control.

When a child is to be born, the woman relations of the father make cradles for it, or some woman not a relation may make one. When the cradle is brought to the lodge and presented, the father may give a horse to each one who brings a cradle. The mother of the girl who is to be confined asks certain women to assist at its birth. They—or even a male doctor called in for the purpose—give the girl medicine from time to time, so that she may have an easy delivery. The medicine given is the root of *Balsamorhiza sagittata*, called by the Cheyennes *hi-tā-ne hi-s-s'-e-we-yo*, or bark medicine.

When the birth is about to take place, they have a bowl ready in which to wash the child, and a knife is at hand to sever the umbilical cord. In old times they used a flint knife for the purpose, and midwives long preserved these stone knives for this particular use.

When the child is born it is washed. The blood is squeezed out of the umbilical cord, which is wrapped once about the finger and cut off short. The child is wrapped in a sheet or cloth, the inner surfaces of the legs being first dusted with powder from

the prairie puffball, so that the tender skin shall not chafe, and the navel dried with the same dust.

The child is then put in its cradle. At first it is not allowed to nurse from its mother, but some other woman who has a young child nurses it. The medicine women for four days free the mother's breasts from the early mammary secretion. During this time the mother is given doses of *môt-si-hi-yân*, the milk medicine (*Actæa arguta*), to induce a free flow of milk. Four days after birth the child may nurse from its mother.

At any time after the child has become strong, the father may lead out his best horse, and giving it away with other presents (and perhaps even his warbonnet), may have his child's ears pierced—not actually, but formally.

THE DIFFERENTIATION BETWEEN THE PENOB- SCOT AND THE CANADIAN ABENAKI DIALECTS

By J. DYNELEY PRINCE

The Penobscot Indians of Maine number at present not more than 300 to 350, most of whom are resident at the Indian village of Oldtown on Penobscot river, near Bangor. These people still speak a characteristic Algonquian language which bears more resemblance to the idiom of the Abenakis near Pierreville, Quebec, than it does to that of the nearer Algonquian neighbors of the Penobscots, the Passamaquoddies of Pleasant Point, Maine. Moreover, a philological examination of Penobscot and Abenaki shows that both of these forms of Algonquian speech are sister dialects which have sprung from a common original at a comparatively recent date. The early history of the Maine Indians still further confirms this statement. It is well known that the Abenakis of Canada are the direct descendants (of course with some admixture of French and other blood) of the majority of the savages who escaped from the great battle of the Kennebec in Maine, where the English commander Bradford overthrew their tribe December 3, 1679.¹ Many of the survivors at once fled to French Canada, where they settled themselves in their present village of Saint Francis, near Pierreville, Quebec (*Alsigontegw*, "river of empty habitations"²). Others, again, may have wandered into Canada at a slightly later date. There can be little doubt that the Indians now called Penobscots, from their resi-

¹ Trumbull, *Indian Wars*, pp. 96-97.

² *Alsigontegw* = Old Abenaki *Arsikantekw*, from *arsi* "empty" + *kan* an infix signifying "cabin," and *tekw* "river"; cf. modern *tego* "wave." See Gill, *Notes sur les Vieux Manuscrits Abenakis*, pp. 13 ff., Montreal, 1886.

dence near the river of that name, are the descendants of those of the early Abenakis who, instead of fleeing to French dominions, eventually submitted themselves to the victorious English.

It will thus be seen, in examining the Penobscot and Abenaki idioms, that we have to deal with a dialectic differentiation which must have taken place within a period of two hundred and twenty-two years; i. e., from 1679 to 1901, during which time practically no communication has taken place between the Maine Indians and their Canadian cousins, except the visits of a few wandering hunters. It should be added that the similarity which is still so evident between these dialects precludes the supposition that they were linguistically apart at the time of the Indian flight to Canada. Probably nowhere among American languages, therefore, has the philologist so favorable an opportunity as he has here of determining the exact extent and period of time necessary for linguistic differentiation. The object of this paper is to demonstrate, from a careful observation of modern Penobscot and Abenaki usage, the condition of both these dialects in comparison with their common mother tongue, the Old Abenaki.

The Penobscot material used in this treatise has all been gathered orally from Indians at Bar Harbor, Maine. The Abenaki data are the result of several years of study of that language in Canada and northern New York.¹ All the Abenaki words and forms herein quoted are tabulated in a modern Abenaki-English dictionary, now in course of preparation by the writer. The ancient Abenaki material comes from Rasles' lexicon,² the manuscript of which, now in the library of Harvard University, was rescued from the flames of the mission of Norridgewalk during the English campaign in Maine in 1722.

The pronunciation of the Indian words in this article is indi-

¹ See Prince, "The Modern Dialect of the Canadian Abenakis," in *Miscellaneous Linguistica in onore di Graziodio Ascoli*, Turin, 1901.

² "A Dictionary of the Abnaki Language in North America," by Father Sebastian Rasles, published by John Pickering in *Memoirs Amer. Acad. Sci. and Arts*, vol. 1 (N. S.), pp. 575-565, Cambridge, Mass., 1833.

cated as follows: All the consonants should be sounded as in English, with the following exceptions. In Penobscot *ck* has the same value as in English, but in Abenaki it is often, although not invariably, pronounced as *tsʰ*. Rasles always gives *ts*, *tz*, for modern *ck* or *j*. In the same way we find Penobscot and English *j* identical, but the same consonant pronounced *dsʰ* in Abenaki. Abenaki *l* after *a*, *o*, and *u*, usually has a sound like the Polish "barred l." The Penobscot and English *l* are the same, except in final syllables after *a*, *o*, *u*, when the Penobscot *l* is an almost inaudible lingual touch. I have represented it in such cases by a superior *l*, as in *w'mitágwesa'* "his father." In both dialects *ñ* is equivalent to the French nasal *n*, and the combinations *kh* and *ph* are to be pronounced *k + h* and *p + h* respectively. The inverted comma (') indicates a voice-stop, accompanied by a soft guttural, not unlike the Arabic medial *He*. When *m* and *n* are written in juxtaposition with the consonant following them, they have their own inherent vowel, as in *ndaki*, "my land." The ancient Abenaki *r* is represented in both dialects by *l*. So far as I am aware, the only Algonquian idioms which still use *r* are the Montagnais language of Labrador and a dialect of the Cree, spoken near James bay, which approaches very closely to Montagnais. The consonant *s* has always the hard sound as in English "mistake." The combination *ss* in Penobscot is a medial sibilant, half-way between English *s* and *z*; i. e., it stands in about the same relation to each as the Czech voiceless *t* does to English *t* and *d*. The *w* in *kw* is pronounced with a soft whistling vowel following it. In both dialects the vowels have the Italian values, except Penobscot *a* = English *aw*, Penobscot *â* = a very short *a*-sound, *ø* as in German, and the apostrophe (') which represents a short indeterminate vowel sound like the Hebrew *Sh'va*. When two vowels are written together, as *aa*, they are each pronounced separately with a hiatus.

As to intonation, the two dialects differ widely, which is often as much of a bar to mutual comprehension as the comparatively

slight differences in vocabulary. The Penobscots accentuate their words in much the same manner as do their distant neighbors the Passamaquoddies¹; i. e., they sing their syllables, giving sometimes to the first and often to the second, third, and fourth syllable of a combination, a rising inflection and then allowing the voice to fall on the succeeding syllable. If the syllable after the rising tone is followed by still another syllable in the same word, this ultimate often receives a secondary tone-rise similar to an interrogative inflection in English. This, however, is never so high as is the first inflection. Thus, in the word *nachigadónkuk*,² "they go hunting," there is only one rising inflection, that on the fourth syllable, while the ultimate receives the voice-drop. In the forms *sénóbák* "men," *unodakwéná*³ "they hear," *udélaná* "they say to him," we have the high rise, the drop, and the secondary rise occurring on the syllables indicated. This difficult system of tones can be learned only by practice, as there is apparently no rule for the place of the variable rising inflection. The Abenaki intonation, on the other hand, is very monotonous, as every syllable has practically the same accented value. The voice *timbre* of the Penobscots is pitched somewhat higher than that of the Abenakis.

I am strongly tempted to regard the Penobscot system of intonation as the original one, which was, no doubt, peculiar to the ancient language, first, because the racially and linguistically kindred Passamaquoddies have a very similar system and they are and have always been too distant from the Penobscots to influence the entire tone of the latter speech, and, secondly, because the Abenakis have been for two centuries in Canada, surrounded by and allied by blood to French-speaking whites, whose idiom has been used as a second language for several generations by nearly all the residents of Saint Francis. Under these conditions, it would be quite natural that the French practice of lay-

¹ Cf. Prince in *Proc. Amer. Philos. Soc.*, XXXVIII, p. 183.

² I represent the first rising inflection by the acute accent (´), the voice-drop by the grave (`), and the second rise by an inverted circumflex (v).

ing equal stress on each syllable should influence the accentuation of this Indian dialect. The Penobscots, on the other hand, have had very little intercourse with the English-speaking whites, who are much more prone to hold themselves aloof from the Indians than are the Canadian French.

The main organic variation between the Penobscots and the Abenakis consists of the striking phonetic differences which have developed between the dialects. Most of these, as is quite natural, appear in the vowel system, whose most important changes from the mother idiom may be tabulated as follows in each dialect:

PENOBSCOT	ABENAKI	OLD ABENAKI	ENGLISH
A.	A.	A.	
<i>medala</i>	<i>medala</i>	<i>mtara</i>	ten.
<i>n' musajin</i>	<i>n' musajin</i>	<i>nem8ssantain'</i>	I love.
<i>p'la</i>	<i>p'la</i>	<i>p'la</i>	very.
A.	OÑ.	AÑ.	
<i>achimowāgon</i>	<i>oñjmowōgan</i>	<i>nañnegañnañ-</i> [<i>tseðāgan'</i> tale.	
<i>agim</i>	<i>oñgem</i>	<i>añgem</i>	snowshoe.
<i>sāg'mā</i>	<i>soñg'moñ</i>		chief.
<i>widābe</i>	<i>widoñba</i>		friend.
E.	A.	E.	
<i>alnōbe</i>	<i>alnoñba</i>	<i>arenañbe</i>	man, Indian.
<i>awēni</i>	<i>awoñni</i>	<i>aðēnni</i>	who, someone.
<i>kəgwes</i>	<i>kagwēs</i>	<i>kəg8es</i>	what?
<i>w' lōgwē</i>	<i>w' loñg'wa</i>	<i>ðrañg8e</i>	yesterday.
E.	E.	E.	
<i>nebi</i>	<i>nebi</i>	<i>nebi</i>	water.
<i>petegwāgamek</i>	<i>petegwoñgamak</i> , round [lake.	<i>peteg8igen</i>	ball.
E.	A and OÑ.	E and AÑ.	
<i>mewia'sis</i> , a little.	<i>maoñwi</i> , rather.	<i>meðissis</i>	a little.
<i>tebauwus</i>	<i>toñbauwōs</i>	<i>toñbaðañs</i>	seven.
I.	I.	I.	
<i>idam</i>	<i>idam</i>	<i>ahidam</i>	he said.
<i>k'chl</i>	<i>k'chl</i> , big.	<i>nek8na'k8ri</i>	I am big.

¹ In Old Abenaki the sign *ð* represented consonantal *w*, *w'* followed by the short vowel, and *n*.
² A combination of *mañnegāñ* "old" and *añtiewōgan* "tale."

PEROMSCOT	ABENAKI	OLD ABENAKI	ENGLISH
I.	E.	E.	
<i>nsida</i>	<i>nseda</i>	<i>ntseda</i>	three times.
O.	O.	8.	
<i>alemôs</i>	<i>alemôs</i>	<i>aremôs</i>	dog.
<i>awenôch</i>	<i>awenôch</i>	<i>aðennôts</i>	Frenchman.
O.	ON.	AN.	
<i>alnôbe</i>	<i>alnoñba</i>	<i>arenanbe</i>	man, Indian.
<i>spôd'ku</i>	<i>aspoñna'kiwîk</i>	<i>aspañsðiði</i>	morning.
O.	Vowel inherent in N.	E.	
<i>nogwudaf'gwe</i>	<i>ngwudaf'gwa</i>	<i>negðda'tegðe</i>	hundred.
Ö.	ÖN.	AN.	
<i>w'dalidahôrszi</i>	<i>w'dalidahôñzi</i> , he con-		
	[siders. <i>nederitahanði</i>	<i>ntsahsek</i>	I consider.
<i>nsôzûk</i>	<i>nsoñzek</i>		eight.
O'.	ON.	AN.	
<i>-o'kan</i>	<i>-onkan</i>	<i>-añkða</i>	hunt.
U.	U.	8.	
<i>kiûna</i>	<i>kiûna</i>	<i>kiðna</i>	we (excl.).
<i>niûna</i>	<i>niûna</i>	<i>niðna</i>	we (incl.).
U.	O.		
<i>pudawasi'na</i>	<i>w'bodawasiñoñ</i>		they take counsel.
U.	A.		
<i>sukhamid</i>	<i>sakat</i>		standing upright.
U.	ON.	AN.	
<i>nukw'dus</i>	<i>ngwedoniz</i>	<i>nekðdañs</i>	six.
<i>-kesunkaw</i>	<i>-kasonkaw</i>	<i>-kasañnkao</i>	-teen.
U.	Vowel inherent in N.	E.	
<i>nukw'dus</i>	<i>ngwedoniz</i>	<i>nekðdañs</i>	six.
AW (AU).	AW.	E8 and AO.	
<i>iawda</i>	<i>iawda</i>	<i>ieðda</i>	four times.
<i>-kesunkaw</i>	<i>-kasonkaw</i>	<i>-kasañnkao</i>	-teen.
AW.	A.	A.	
<i>tebauwus</i>	<i>toñbauwoñz</i>	<i>tañbaðañs</i>	seven.
AW.	ONW.		
<i>p'mauszewinnowak</i>	<i>p'moñzewinnowak</i>		people.
EW.	AW.	E8.	
<i>iew</i>	<i>iaw</i>	<i>ieð</i>	four.
IU.	IU.	IU.	
<i>piuksessik</i>	<i>piuksessik</i>	<i>piðsessik</i>	little.

The following explanation should be made in connection with the above table.

(1) Out of seventy-two recorded cases where *a* is found in Penobscot, the corresponding vowel appears forty-eight times in Abenaki as *a* and twenty-four times as *oñ*. The *a*-vowel and the nasal *añ* are characteristic in many of these cases in Old Abenaki.

(2) Out of seventy-two recorded cases where *e* is found in Penobscot, the corresponding vowel appears in Abenaki sixty-one times as *a*, seven times as *e*, three times as *oñ*, and once as *ñ*. The *e*-vowel is characteristic in nearly all these cases in Old Abenaki; compare, however, *tañbaðañs*, Penobscot *tebauvus*, Abenaki *toñbauoñs* "seven."

(3) Old Abenaki, Penobscot, and Abenaki *i* is, so far as I am aware, constant. The only exception noted is the verbal prefix of the third person in Penobscot *ud'la-* and in Abenaki *ud'li-*; compare Penobscot *ud'labozino*, Abenaki *ud'libozinoñ* "they embark."

(4) Out of twenty-one recorded cases where *o* is found in Penobscot, the corresponding vowel appears in Abenaki eleven times as *o*, nine times as *oñ*, and once as the vowel inherent in the consonant *n*. It will be seen from the above that the pure modern *o* is a heightening from Old Abenaki *o = ù*, and that modern *oñ* is a direct survival of ancient *añ* which Penobscot has in some cases changed to *o* and in some cases to *ö*. The Old Abenaki had an *e*-vowel in *negsda'tegde*, "hundred," which becomes *o* in Penobscot and the inherent *n*-vowel in Abenaki. Note also that in Penobscot *o'kan*, Abenaki *oñkan*, the Abenaki has preserved better the Old Abenaki form, *-añkða*.

(5) The Penobscot *ö* appears twice in Abenaki as *oñ*. Rasles makes no allusion to this sound in Old Abenaki.

(6) Out of eight recorded cases where *u* is found in Penobscot, the corresponding vowel appears three times in Abenaki as *u*, once as *o*, once as *a*, once as the inherent *n*-vowel, and twice as *oñ*. The Old Abenaki has *e* for later short *ü* in many instances.

(7) The diphthong *aw* (*au*) is identical in both modern dialects in two recorded cases: — *kesunkaw-kasonkaw* and *iawda-iawda* (compare, however, Old Abenaki *ie8da*); Penobscot *aw* = Old Abenaki and Abenaki *a* once, and once Penobscot *au* = Abenaki *oñw*. On the other hand, we find Penobscot *ew*, Abenaki *aw* once; *iew-iaw* (so Old Abenaki *ie8*).

(8) In Old Abenaki, Penobscot, and Abenaki the diphthong *iû* is constant.

An instance of diphthongal contraction is seen in Penobscot *talaû* for Abenaki *tahoñlâwi* "like, similar to."

The consonantal variations between Penobscot and Abenaki are not numerous. Both dialects follow the same system of consonants, and in both appears the frequent change of *tenuis* (*p, t, k*) into the corresponding medials (*b, d, g*) after an immediately preceding vowel. Thus, we find in both *kizito* "he makes," but *k'gizito* "thou makest"; Penobscot *pidige*, Abenaki *pidiga* "enter" (imv.), but Penobscot *k'bidige*, Abenaki *k'bidiga* "thou interest;" in both, *New York tali* "at New York," but *iû dali*, "here" (i. e. "in this"). In the case of *p, t, k* = *b, d, g*, the rule seems to be practically fixed, even when the consonant begins a word; *nia ta gia* "I and thou," but *kia ta nia* "thou and I." Sometimes, however, a *p, t, or k* appears in writing apparently *after* a vowel, but in such a case it is quite certain that this preceding vowel is accompanied by the rough breathing', which is never indicated in ordinary Penobscot and Abenaki texts; thus, *kizito* for *kizi'to*.

A similar medialization is found with *ch, s*, which in Abenaki are often heard after vowels as *j* and *z* respectively. Thus, Abenaki *channoñmuk* "one stops, hinders," but *w'janibianon* "they stop paddling" (i. e. $\sqrt{\text{chan}} + \text{ibia}$ "paddle"); *sibo* "river," but *k'chî sibo* "big river." In Penobscot, the change *ch* = *j* seems not to be so invariable as in Abenaki. Thus, I find Penobscot *nochibôsîn* "I depart in a boat," which in Abenaki would usually be *nojibôsîn* (*n* = "I" + *oji* = "from" + *pôz* = "go in a boat");

compare also Penobscot *kamâch* "very," Abenaki *kamoñji* "O how—" (exclam.); Penobscot *n'wuchémen*, Abenaki *n'wajônemen* "I have it," etc. In Penobscot, however, I have heard plainly the form with middle *j*; *n-ji-enigokutahgon* "I go hence to spear fish," so that in this dialect the rule does not seem to be so firmly fixed in the case of *ch=j*. In Penobscot, the original *s* generally becomes *ss* after a vowel, as *abassi*, Abenaki *abasi*, "tree"; Penobscot *kisatumâwa* "they decide," Abenaki *kis'toñjik* "one decides," etc. In Penobscot the *s* appears as pure *s* in *kisi*—"can."

Indications of such consonantal changes are not recorded in Old Abenaki texts. Thus, Rasles writes *nepitighe* "j'entre," Abenaki *n'bidiga*, Penobscot *n'bidige* "I enter"; also *netsan&sse* "je m'arrete," *netsaniganbaði* "je m'arrête marchand auparavant," etc. This by no means precludes the supposition that such changes did not exist at all. It is quite possible that the earlier Abenakis may have only partially medialized their consonants after vowels and that the form *nepitighe*, for example, really represented a form *nepitighe* (*p, t* = voiceless *tenués*), a phenomenon which escaped Rasles's French ear. I have personally heard almost this mincing pronunciation from some Abenakis who were trying to speak with elegance. The tendency to medialization in ancient times, however, must have been very slight, if it existed at all.

A very interesting point also is the apparent loss of the nasal, Old Abenaki *añ*, Abenaki *oñ*, in the Penobscot dialect. I say "apparent," because Père Vetromille, in his *Indian Good Book* (New York, 1858),¹ writes a nasal in many words; compare *alnamba* for Penobscot *alnôbe* "Indian." I tried in vain to hear

¹ *Alnambay Uli Awikihigan kisitumexia Eugén Vetromille, S. J., Alnambay Patnas* ("Indian Good Book which Eugène Vetromille, S. J., the Indian Priest, made"), New York, third edition, 1858. The so-called Penobscot and Passamaquoddy forms in this work do not agree phonetically with the actual spoken idioms. I strongly suspect that the good father introduced some sounds and forms as he thought they ought to be from the Old Abenaki formularies.

this sound in Penobscot, but could only place it distinctly in the word *muŋs* "moose" and in the verbal third person suffix as *w'ni'lōŋ*. Once or twice I fancied that there was a nasalized *n* in other words, but in each case when my instructor repeated the syllable, it was without a detectable nasal vowel. The probability is that the *n̄* has only recently disappeared in Penobscot. This obsolescence of the nasal may be due both to the influence of the kindred Passamaquoddy idiom, which has no such sound, and to that of English which nearly all the Penobscots can use.

The only consonantal changes worthy of note between Penobscot and Abenaki are, (1) the clear insertion of *h* in Penobscot before the particle *ali* = conj. "that, if"; thus, Penobscot *kiabe k'wao'tawi halig'lōlani*; Abenaki *kia k'wao'tawi alig'lolana* "can you understand me, if I speak?" This is probably not a distinctively Penobscot phenomenon, as the Abenaki forms *ndaaba* and *ndahaba* "not," *kalaato* and *kalahato* "yes, indeed," occur constantly. The *h* is evidently inserted in these cases to avoid a hiatus. (2) In Penobscot *abigiwo'set* "when he returns from hunting" and Abenaki *oñboñji-kich* "let him return," there is a clear case of palatalization; *g* = *j*.

The grammatical structure of both dialects is essentially the same, the most noteworthy peculiarity of Penobscot being undoubtedly its retention of the original = *a'* (Old Abenaki)—*ar* of the ancient "accusative of the third person," or obviative. The great majority of Algonquian idioms represent an objective case only in a noun denoting an animate object, when it is preceded either by a verb in the third person singular or plural, or by another animate noun in the third personal state. This was so in ancient Abenaki, where the sign of such an obviative state both in the verb and noun was = *r* or *ar*, and it is still true of both its modern daughters Penobscot and Abenaki, although the Canadian dialect has dropped the = *l* (Old Abenaki *r* = *l*) and altered the verb-form slightly, retaining only the *a*-vowel in the noun as the obviative sign; thus, Old Abenaki *unamihahr*

aremsar, Abenaki *unamihon alemosa* "he sees the dog." It will be seen that the modern Abenaki has changed the original *an* to *-on* in the verbal ending and dropped the *-r = -l*. Compare Penobscot *iutwa senobe unamia' nolka'*, Abenaki *iu sanoba unamion nolka-a* "this man sees the deer," or Penobscot *wa nolke unamia' alemossa'*, Abenaki *wa nolka unamion alemosa* "that deer sees the dog." An apparent exception in Penobscot to this rule is the word *muas* which makes its obviative *muasso*; compare Penobscot *wa senobe w'ni-lon' muasso*, Abenaki *wa sanoba w'ni-lon mōnza* "that man kills the moose." For an instance of the obviative occurring after another obviative, compare Penobscot *alnobe unamia' widāba' wijia'*, Abenaki *alnoŋba unamihon widoŋbaa wijiaa* "the Indian sees his friend's brother."

There is no trace in Penobscot, Abenaki, Passamaquoddy, or Lenape of the so-called sur-obviative or "third third person" of the Cree and Ojibwa.

The loss of the obviative *-l* in Abenaki is quite natural, as its feeble pronunciation (*-a'*) shows that it is fading away also as a recognizable element in Penobscot, although in the latter dialect the obviative *l* is audible after the vowels *i* and *e*. The obviative *-l* is still strongly uttered in Passamaquoddy; *w'nimial haaswul* "he sees the horse."

The distinction between animate and inanimate gender is still preserved in both Penobscot and Abenaki, the only deviation between the dialects which I have observed being the Penobscot inanimate plural *madeg'n'l*, but Abenaki animate plural *madagenok* "skins." Here the Abenaki has departed from Old Abenaki which has *mateghenSr*, inanimate.

The following comparative table of Old Abenaki, Penobscot, and Abenaki numerals, separable pronouns, and pronominal elements with nouns, will illustrate the relation and deviation of both the modern dialects from the mother tongue.

		THE NUMERALS	
VALUE	PEROMISCOT	ABENAKI	OLD ABENAKI
1	<i>pezukto</i>	<i>pezekw</i>	<i>pezek8</i>
2	<i>niz</i>	<i>niz</i>	<i>niss</i>
3	<i>na's</i>	<i>nas</i>	<i>nass</i>
4	<i>iew</i>	<i>iaw</i>	<i>ie8</i>
5	<i>nan</i>	<i>nohlan</i>	<i>barenesk8 (nann8ak)</i>
6	<i>nukw' dus</i>	<i>ngwedoñs</i>	<i>neh8dañs</i>
7	<i>tebauwus</i>	<i>toñbauwoñs</i>	<i>tañba8añs</i>
8	<i>nsözuk</i>	<i>nsöñzek</i>	<i>ntsañsek</i>
9	<i>noli'</i>	<i>noliwi</i>	<i>n8ri8i</i>
10	<i>medala</i>	<i>medala</i>	<i>mtara</i>
11	<i>nogwudonkaw</i>	<i>ngwedoñkaw</i>	<i>neg8dañnkao</i>
12	<i>nissonkaw</i>	<i>nisonkaw</i>	<i>nisañnkao</i>
13	<i>nsonkaw</i>	<i>nsonkaw</i>	<i>tsañnkao</i>
14	<i>iawonkaw</i>	<i>iawonkaw</i>	<i>ie8añnkao</i>
15	<i>nanonkaw</i>	<i>nononkaw</i>	<i>nañnankao</i>
16	<i>nukw'dus-kesunkaw</i>	<i>ngwedoñs-kasonkaw</i>	<i>neg8dañntsañnkao</i>
17	<i>tebauwus-kesunkaw</i>	<i>toñbauwoñs-kasonkaw</i>	<i>tañba8añntsañnkao</i>
18	<i>nsözuk-kesunkaw</i>	<i>nsöñzek-kasonkaw</i>	<i>ntsañsek-kesañnkao</i>
19	<i>noli'-kesunkaw</i>	<i>noliwi-kasonkaw</i>	<i>n8ri8i-kesañnkao</i>
20	<i>nisinske</i>	<i>nisinska</i>	<i>nisineske</i>
30	<i>nsinske</i>	<i>niinska</i>	<i>tsineske</i>
100	<i>nogwudat' gwe</i>	<i>ngwedat' gwa</i>	<i>neg8da'teg8e</i>

THE SEPARABLE PRONOUNS

PEROMISCOT	ABENAKI	OLD ABENAKI	ENGLISH
<i>nia</i>	<i>nia</i>	<i>nia</i>	I
<i>kia</i>	<i>kia</i>	<i>kia</i>	thou.
<i>neg'ma</i>	<i>ag'ma</i>	<i>8a (?)</i>	he, she, it.
<i>nlüna</i>	<i>nlüna</i>	<i>ni8na</i>	we, I and they.
<i>klüna</i>	<i>klüna</i>	<i>ki8na</i>	we, I and you.
<i>klüwa</i>	<i>klüwoñ</i>	<i>kir8a</i>	you.
<i>negumwa</i>	<i>ag'moñwoñ</i>	<i>(?)</i>	they.

PRONOMINAL POSSESSIVE ELEMENTS WITH NOUN

PEROMISCOT	ABENAKI	OLD ABENAKI	ENGLISH
<i>n'mitögwes</i>	<i>n'mitögwes</i>	<i>n'mitañg8s</i>	my father.
<i>k'mitögwes</i>	<i>k'mitögwes</i>	<i>k'mitañg8s</i>	thy father.
<i>w'mitögwesat'</i>	<i>w'mitögwesat'</i>	<i>w'mitañg8sar</i>	his, her father.
<i>n'mitögwesena</i>	<i>n'mitögwesena</i>	<i>n'mitañg8sena</i>	our father (excl).
<i>k'mitögwesena</i>	<i>k'mitögwesena</i>	<i>k'mitañg8sena</i>	our father (incl).
<i>k'mitögweswa</i>	<i>k'mitögwes'woñ</i>	<i>k'mitañg8swan</i>	your father.
<i>w'mitögweswa</i>	<i>w'mitögwes'woñ</i>	<i>w'mitañg8suar</i>	their father.

It should be noted that Abenaki has two pronouns for the second persons plural: *kiltwoñ*, used when speaking to several persons when their number is definite to the speaker, and *kiltwowoñ*, used of an indefinite number. These may have existed in Old Abenaki, but I have been unable to find them in Penobscot. The exclusive and inclusive "we," it will be observed, exists in all the dialects.

The verb with incorporated suffixes is essentially the same in both the modern idioms, the main difference being the omission of the nasal in the third person; compare Penobscot *namio*, Abenaki *n'namioñ* "I see him." The Penobscot form *namiuñkw* (*n'namiuñkw*) = Abenaki *n'namioñkw* "he sees me." It will be noticed that the Penobscots do not pronounce the *n* of the first person in these forms.

The following sentences and short story in Penobscot and Abenaki, with commentary, will serve to illustrate still further the mutual relations of the two dialects.

SENTENCES

- (1) Pen. *W'li spoza'ku niddbe*
Abn. *Paakwinonguzian nidoñba* } "Good morning, my friend."
- (2) Pen. *N'weweldamen kia alod'wan mewia'sis*
Abn. *N'warwaldamen k'd'lonkwaoñgan tagasiñst* } "I know your
language a little."
- (3) Pen. *Ndaligissagekimge Bar Harbor* } "I learned it at Bar Har-
Abn. *Ngisagakimzi Bar Harber tali* } bor."
- (4) Pen. *Nda mi'sgi awenoch namio w'dalnobañ'wun* } "There are not
Abn. *Ndattamo kuina wonbigijik alnoñba oñd'wah* } many white
men who speak
Indian."
- (5) Pen. *M'selok p'mausowinnowak iñ dali* } "There are many peo-
Abn. *M'salok p'moñsowinnowok iñ dali* } ple here."
- (6) Pen. *Nia nglidahus k'm'sali-g'zi'toba moni* } "I think you must
Abn. *Nia ndelaldamen k'm'sali-utitoba moni* } make much money."
- (7) Pen. *Noli-musajinba nadodielin* } "I would like to go hunting."
Abn. *N'wigiba n'nadialin*
- (8) Pen. *Nia mechimi maché'la tagwög'wi* } "I go every autumn."
Abn. *Nia majimiwi n'moñji tagwoñgwiwi*

- (9) Pen. *Nbemiwigadielin ndok ndaman* } "I like to hunt
 Abn. *Nbamaldamen n'nadielin ndaki ndaman* } more than to fish."
- (10) Pen. *Wa senobe gizi-awenoch-waduw* } "That man can speak
 Abn. *Wa sanoba gizi-iglizmon-ohd'wa* } English."

KIWA'KWĪ ACHIBOWĪ'GĒS.

KIWA'KWĪ OŖJOWŪGĒS.

Niswāk sēnōbāk nachigadōnkāk
*kwazibēmāk.*¹

Niga sald'kī nodāwōnā awēnā
maskwulamiyiljīl mē'tāg'māk.

Niga mīna unodāwōnā maskwul-
amiyiljīl.

Unamidwōl wechkawō 'seltjīl.

Malemtē n'mābechō'sē eyidit.

Niga ud'lanā; pela mītsi. Niga
udidāmēn wā sēnōbē; nda ngizid-
wūn.

Ndā'chwi-ālsē edali thē pēbōnkīk.

Ēlwē't na sēnōbē kiwā'kwī.

Wdainōp nīzwāk sanōbāk na-
dialijik senojīwī nebesēk.

Ni sasala'kīwī w' nodāwōnōn awa-
nīhī tajkuawīlījī a'l'mōhgamak
ma'tōhgamak.

Niga mīna unodāwōnōn awanīhī
tajkuawīlījī.

Ni unamīōnōn sanōbāa sōṅkhesat

li ayidit. Niga udi'loṅnōh; mo-

hīnā. Niga w'didāmen wā
sanōbā; nda ngizīawōn.

Ndā'chowī-losa udali thē pēbōnkīk.

Pakalmēguat wā sanōbā kiwā'kwī.

Translation

A STORY ABOUT A KIWA'KW (FOREST GIANT)

There were two men who went hunting by a lake. Then suddenly they heard some one calling out (along the lake) at the end of the lake. Then again they heard some one calling. Then they saw a man coming to where they were. Whereupon they said to him, "Pray eat." But that man said, "I cannot stay here. I must go to where it is cold to the north." Certainly that man was a *Kiwa'kw*.

COMMENTARY

(1) The word *spōw'ku* occurs in Abenaki in the form *as-poṅza'kiwīk* "in the morning"; *spōṅzoo* "it is morning"; *n'spōṅ-sipi* "I breakfast," etc. *Paakuinoṅgwizian* is really a participle in the second person; lit. "hail thou." The Penobscot *niddābe*, Abenaki *nidoṅba*, contain the ending *-ābe -ōṅba* signifying male; compare Delaware *len-āpe* "a man" (*lenno + ape*).² (2) *Alod'wan* is a participle, second person, "that which thou speakest," from *od'wa*; compare Abenaki *loṅdwaōṅgan*, noun formed with pre-

¹ I represent the first rising inflection by the acute accent ('), the voice-drop by the grave (`), and the second rise by an inverted circumflex (v).

² See Prince in *American Journal of Philology*, xxi, p. 298.

formative *l-* + *oñd'wa* + abstract ending *-oñgan*. Both *metwia'sis* and *tagasiäsi* occur in Old Abenaki. (3) The Penobscot incorporates the locative preposition *tali* (*dali* after vowel) with the root *agekim*. The Abenaki separates it as a postposition. (4) Note the difference of construction. (5) Penobscot *nglidahus* is a Passamaquoddy loan-form. The real verb "think" is Abenaki *alidahömuk* "one thinks," from which *ndelaldam*. *M'sali* "much" is incorporated into the verb-form in both dialects. Penobscot uses *kizi'to* and Abenaki uses *ulito* "make." (6) Penobscot *nadodielin* is a participle, first person, Abenaki *n'nadialin* is subjunctive. (7) Penobscot *mache'la* would be Abenaki *moñji'lon* and mean "bring," i. e., "cause to go." (8) Penobscot *Nbemiwigadielin* = *n* "I" + *pemi* "more" + *wig* "wish" + (*n*) *adieli* "hunt." This is a better instance of agglutinative polysynthesis than the Abenaki *nbamal-damen*; *n* "I" + *pami* "more" + *alida* "think," on which compound form depends the subjunctive *n'nadialin*. *Ndaman* is also subjunctive. (9) Abenaki *awanooh*, the cognitive of Penobscot *awenoch*, means Frenchman, the first whites with whom the early Abenakis were brought in contact.

Penobscot *nachigadonkak* is a Passamaquoddy loan-form. Note the Abenaki plural participle *nadialijik*. Penobscot *kwasibemuk* is a Passamaquoddy loan-word, the last element of which contains *√bi* "water." Abenaki *senojitwi* "on the shore of" (from *sen* "stone, rock"). Abenaki *sasala'kiwi* is a reduplicated form. Note the absence of the prefix *w-* in Penobscot *nodarwona* (Abenaki *w'nodarwoñnoñ*) "they hear." The *-l* in Penobscot *awenil* (obviative) is audible, because it follows a soft vowel. Compare Abenaki *awanihi* with the last syllable lengthened, on account of the loss of the *-l*. *Maskwulamiyilijil* is Passamaquoddy. Abenaki *tajkuaziliji* (obviative) "he calling."¹ *Wechkawo'selijil* (obviative) is a Passamaquoddy loan-form; in Passamaquoddy *wechkoyalijil*. *Malomte* = Passamaquoddy *malumde*. Note the Abenaki

¹ The formation of the participle in Abenaki is *-et*, obviative *-ahji*; *-it*, obviative *-ihji* (for *ahjiil*, *ihjiil*).

mohina "eat," from the stem \sqrt{mo} , instead of *mitsi* which also exists in Abenaki. *Ngiziatwun* = *n* "I" + *kisi* "can" + *ai* "be" + *wun* = negative ending. Penobscot *elwe't* is probably from Passamaquoddy *elwe'kal*: *yut skidap elwe'kal kiwa'kw*, "that man must have been a *Kiwa'kw*," i. e. "a forest giant."

In point of vocabulary the dialects have not deviated very widely. Thus, in one of my collections of 315 Penobscot words, there are 248 instances of close cognate relationship with Abenaki, of which 63 are exactly equivalent. Of the remaining 67 ($315 - 248 = 67$), 57 are explicable as being either Passamaquoddy loan-words or forms, or else as independent formations.

It appears evident from a careful comparison of Penobscot and Abenaki that the former dialect has diverged somewhat less than the latter from the original common language. Thus, Penobscot has retained the primitive system of phonetics much more accurately than has the Abenaki, and it is probable that the Penobscot intonation is more like that of the ancient speech. Penobscot still has the obviative *-i*, a highly important conservation. On the other hand, the Abenaki has the ancient nasal sound which has almost disappeared in Penobscot. I have observed in the Maine dialect also what seems a better preservation of the original pure polysynthesis in many instances. The Abenaki appears more inclined than the Penobscot to separate the sentence elements into distinct words, especially in the matter of the use of separate prepositions or postpositions, rather than of incorporated prepositional elements in the verb-form. Thus, Penobscot *Ndaligisa-gekingon New York*, but Abenaki *Ngisagakingon New York tali* "he taught it to me *at* New York."

In short, the dialects exhibit a highly interesting amount of individual conservation and development. Their deviations are not greater than we should expect to find between any two idioms which have been kept absolutely apart for more than two centuries, so that the old theory regarding the instability of American languages finds no support from this investigation.

ORENDA AND A DEFINITION OF RELIGION

By J. N. B. HEWITT

Welfare is the primary motive underlying all human effort. To obtain food, shelter, and raiment, and to preserve life, man in all times and in all lands learned that he must struggle against the adverse conditions of his environment. Interpreted in terms of his self-centered philosophy, these unfavorable conditions were to the savage man the handiwork of mystic potency directed by the will of the environing bodies, purposefully wrought in such wise as to be inimical to his well-being. The savage man conceived the diverse bodies collectively constituting his environment to possess inherently mystic potency, and to be living, thinking, willing, passionate beings who lived, thought, willed, became angry or pleased, like himself under like conditions. This conception persists up through barbarism, albeit vestigially, into civilization.

That life is a property of every body whatsoever — inclusive of the rocks, the waters, the tides, the plants and the trees, the animals and man, the wind and the storms, the clouds and the thunders and the lightnings, the swift meteors, the benign light of day, the sinister night, the sun and the moon, the bright stars, the earth and the mountains thereof — is a postulate fundamental to the cosmologic philosophy of savage man; and, as a concomitant with this, primeval man made the further assumption that in every body of his self-centered cosmos inheres immanently a mystic potency of diverse efficiency and purpose, by the exercise of which the body puts its will into effect, and which sometimes acts independently, and even adversely, to the well-being of its director or possessor. Thus the Iroquoian Condolence Council

was an institution designed to give life and stability to the commonwealth largely by the exercise of mystic potency. In the event of the death of a chief in one of the two phratries of nations, it is the duty of the cousin phratry of nations to condole with the bereaved phratry for its loss and to resurrect figuratively the dead chief by the potency of a prescribed ritual through the installation of another person in his stead, bearing the title and insignia of the dead chief. But, because the ceremony largely concerned the dead and the rites of burial, it could not auspiciously be held in the spring or summer, lest it would kill the seed for planting and would blight the growing crops and fruits. Thus the mystic potency exerted in the promotion of their welfare in government was held to be destructive of the food supply of the people, should its exercise be untimely.

In attempting to discuss ideas presumptively held by primeval man, it must be borne in mind at all times that his world, his cosmos, his universe, was not by any means comparable in extent to that of the modern man of science, and that his environment, his world, was not composed of interdependent bodies forming a system. By the former the earth was held to be an island, supported on the carapace of a turtle floating in the primal sea, and whose extent was at first coextensive with his horizon, but later vaguely extending seventy-five or a hundred miles in any direction from his fireside. Thus, while the world or cosmos of the primeval man was measured by miles, the universe of the man of science is measured by hundreds of millions of miles, and is a member of a vast hierarchy of bodies, flying through space with inconceivable speed by a stupendous vortex motion toward a point in Hercules.

Those accustomed to the dogma of a triune or multiple godhead, of inchoate monotheism, can conceive of such personalities only as emanations or manifestations of that deity; but, owing to a difference of viewpoint, this is a confusion of the thought and feeling of the childhood, or preferably, perhaps, the beasthood,

of humanity, with the concepts, the sentiments, and the activities of the thought of enlightenment. True, it is most difficult, if not relatively impossible, to learn to feel and to think with the elder time, but if the thoughts, motives, feelings, and activities of savage mind are the subject-matter of serious study and interpretation, this must be done in so far as it may be possible so to do.

And so it appears that primeval man was led by his egocentric method of reasoning to infer that the paramount motive underlying the operations of the diverse bodies of his varying environment was also the attainment of the welfare of these bodies, which was but too often, he painfully learned, at the expense of his own well-being, and frequently even of the life of his kind.

From the monody of savagery to the multitoned oratorio of enlightenment, the way is truly long. To the inchoate mentation of primitive man music held close relationship with this subsumed magic potency. To savage mind, so beastlike in its viewpoints, singing or to sing had a significance and a purpose which greatly differ from the meaning and the motive associated with it today by the average cultured person of modern civilization and enlightenment; yet that earlier significance and purpose survive today, in a measure, in the mystical use of music among the diverse peoples of the world. To the incipient reasoning of the savage mind it appears that the phenomena of environing nature, produced by the operations of the bodies and beings thereof, occur in the fulfillment by magic potency of the will of independent and self-sufficient personages, primitively largely zoic, though inclusive of man, but latterly dominantly anthropomorphic. Furthermore, since action or motion was held to be a manifestation of a subsumed mystic potency by living agents, and since activity is usually accompanied by sound or sounds, it followed naturally that noises or sounds were in like manner interpreted to be the certain evidence of the utterance, use, or putting forth of such mystic potency to effect some purpose by the bodies or body emitting sound. The speech and utterance of birds and beasts,

the sighing of the wind, the voices of the night, the moaning of the tempest, the rumble and crash of the thunder, the startling roar of the tornado, the wild creaking and cracking of wind-rocked and frost-riven trees, lakes, and rivers, and the multiple other sounds and noises in nature, were conceived to be the chanting—the dirges and the songs—of the various bodies thus giving forth voice and words of beastlike or birdlike speech in the use and exercise of their mystic potency. This hypothetic magic potency is, then, held to be the property of all things, all bodies, and by the inchoate mentation of man is regarded as the efficient cause of all phenomena, all the activities of his environment.

And, to a living faith and trust in the reality of this subsumed mystic potency, this reified figment of inchoate mind, human experience in all times and in all lands owes some of its most powerful motives and dominating activities.

Now, this subsumed mystic potency has no name in the English language that adequately defines it. The term "magic," which at first sight might suggest itself as already embodying that notion in its denotation, signifies something quite different. The *Standard Dictionary* defines magic thus: "Any pretended or supposed supernatural or occult art; a generic term for all occult arts. Specifically: (1) The pretended art of putting into action the power of spirits; especially, the pretended art of producing preternatural effects by bringing into play the action of supernatural or spiritual beings, of departed spirits, or of the occult powers of nature. (2) Sleight of hand; legerdemain. (3) Any agency that works with wonderful effect; the enchantment of beauty, art, or the like." And the *Century Dictionary* defines it thus: "Any supposed supernatural art; especially, the pretended art of controlling the actions of spiritual or supernatural beings; (2) Power or influence similar to that of enchantment, as the magic of love; (3) Conjuring; tricks of legerdemain."

It is thus seen that magic, as defined by the lexicographers, denotes an art, a method of doing something, hence this is not the

mystic potency in question. But, without entering into detail which would lead somewhat afield, it may be suggested here that modern magic as defined above — sleight of hand, legerdemain, sorcery, or what not—was initially and primordially an imitative representation or dramatization, so to speak, of the operations of the mystic potency subsumed in the environing bodies. As a vestigial survival of this early phase of thought, may be cited here the well-known habit of the prestigator of today while performing his tricks of making passes with his hands, fingers, and eyes, and of assuming characteristic attitudes and of uttering words purporting to be potent with magic power, to express or simulate the feigned effusion or projection of his mystic potency or his use of that of another body. This procedure is intelligible, seemingly, only on the presumption that the actor thus appeals to a common and living faith, albeit only vestigially held, of the beholders in a subsumed mystic potency in all bodies, and so its tacit assumption arouses no question.

Now, this subsumed magic power is called *waká**, or *mahópa*, or *xube* by the Siouan, *manitowi* by the Algonquian, *pokunt* by the Shoshonean, and *orenda*¹ by the Iroquoian tribes. And it is suggested that the Iroquoian name for the potency in question, *orenda*, be adopted to designate it. In proposing the term, it may be said in favor of its adoption that its signification, or, speaking with the logicians, its intension and extension, is better defined than that of the other terms mentioned. In further justification of the introduction of this neologism into the language, it may be said that it denotes a discrete idea, clearly defined and prolific in

¹ Among these people, according to dialectic differences, this hypothetic potency is called *oréñdā'* or *haréñdā'* by the Mohawk and Cayuga, *aléñdā'* or *káléñdā'* by the Oneida, *gáléñdā'* or *oréñdā'* by the Onondaga and Seneca, *uréñdā'* by the Tuscarora, and *haréñdā'* or *oréñdā'* by the Huron. Hence the Anglicized form *orenda* may be taken for the purpose in view. Among the Iroquoian tribes, however, the term *otgon* (*otgon'*), denoting specifically the malign, deadly, lethal, or destructive use or exercise of the *orenda*-potency is gradually, it would seem, displacing the more general vocable, *orenda*, as a name for this hypothetic mystic potency, for the reason, it appears, that the malignant and the destructive, rather than the benign, manifestations of this subsumed mystic potency produce the more lasting impressions on the mind.

the tongue whence it is taken. Moreover, it precipitates, so to speak, what before has been held in solution. *Orenda* is of easy utterance and of simple orthography, and so is readily enunciated. So, until a better name for the mystic potency under discussion is found, let *orenda* be used for it.

The better to define the potency in question and the more clearly to exhibit the importance and the great influence which this concept had and still has upon the inchoate mentation of savage man, and consequently, vestigially at least, upon the mental activities of the civilized man of today, it may be well to trace, as succinctly as may be possible, its effect on the ideas of a definite people, the Iroquois, as these ideas are expressed in their language. *Orenda* is a hypothetic potency or potentiality to do or effect results mystically.

A literal and a free rendering of some of the most striking and distinctively characteristic sentence-words of the Iroquoian tongue will best exhibit the deep significance of the *orenda*-concept in Iroquoian thought and feeling.

A shaman, *rareñdiowā nī'*, is one whose *orenda* is great, powerful; a fine hunter, *rareñdio'*, is one whose *orenda* is fine, superior in quality; when a hunter is successful in the chase, it is said, *wā'tharēndogē'ñnī'*, he baffled, thwarted their *orenda*, i. e., the *orenda* of the quarry; but, conversely, should the huntsman return unsuccessful, it is said, *wā'thorēndogē'ñnī'*, they (the game) have foiled, outmatched his *orenda*; if a person in a game of chance or skill defeats another, it is said, *wā'hoñwarēndogē'ñnī'*, he thwarted, overcame his magic potency, his *orenda*, i. e., the *orenda* of his opponent; at public games or contests of skill or endurance, or of swiftness of foot, where clan is pitted against clan, phratry against phratry, tribe against tribe, or nation against nation, the shamans, *hatirēñdiowā'nē'*, men reputed to possess powerful *orenda*, are employed for hire by the opposing parties respectively to exercise their *orenda* to thwart or overcome that of their antagonists, thus securing victory to the patrons of the successful shamans; when

the elements are gathering and a storm is brewing, it is said, *watrëndönni*, it (the storm-maker) is making, preparing its *orenda*; and when the lowering storm-clouds appear to be ready, it is said, *iotrëndönni*, it has finished, has prepared its *orenda*; these two expressions and their conjugational forms are equally applicable to an animal or bird that is angry or in a rage; with a suitable change of pronominal affixes, these same expressions are applicable as well to a man whose anger or wrath is aroused, and so would seek to put his *orenda* to use; a prophet or soothsayer, *ratrëndats* or *hatrëndóthá*, is one who habitually puts forth or effuses his *orenda*, and thereby learned the secrets of the future; the *orenda* of shy animals and birds which it is difficult to snare or to kill, is said to be acute or sensitive, that is, in detecting the presence of the hunter, whether man or beast; anything whose *orenda* is reputed or believed to have been instrumental in obtaining some good or in accomplishing some purpose is said "to possess *orenda*" (*iorëndare*), just as a wealthy person is said "to have money," that is, "an abundance of money"; and if these things or portions of them be chosen and kept against the time of their use, they become what are commonly called charms, amulets, fetishes, mascots, shields, or, if you please, "medicine." Of one who is about to bewitch another male person, it is said, *hoñwa-trëndönniññi*, he is preparing his *orenda* for or against him; *kareñdahétke* *wá'hório*, i. e., it-an-evil-*orenda* it-struck-him, is said of one who, it is believed, died from being bewitched. And, *roterëñnöñte* (*hoterëñnöñde*), he is arrayed in his *orenda*, and *rote-riñnöñte* (*hoterëñnöñde*), he has effused or put forth his *orenda*, are two expressions, sentence-words, which are said in reference to a man who is exerting his *orenda* for the accomplishment of some purpose, this is its primary signification; the first form, *roterëñnöñte*, has come to mean, as a secondary usage, he is hoping for it, is expecting it, because it was the habit to put on one's *orenda* to obtain what is desired; now, the second sentence-word, *rote-riñnöñte* (*hoterëñnöñde*), as a secondary meaning has come to signify,

he is singing, is chanting, but literally, he is holding forth his *orenda*. Thus, singing was interpreted to signify that the singer, chanter, whether beast, bird, tree, wind, man, or what not, was putting forth his *orenda*, his mystic potency, to execute his will; hence, too, it comes that the shaman, when exerting his *orenda*, must sing, must chant, in imitation of the bodies of his environment. Let it be noted, too, that this is the only word signifying to sing, to chant, in the earlier speech of the Iroquoian peoples. In connection with this item it may be of interest to mention the fact that the Iroquois name for the common locust, the cicada, is *kanē*hatq-thā*, which is literally, "it habitually ripens the corn," in short, "the corn-ripeners." It appears that this insect acquired this name because when it sang in the early morning the day became very hot; and so the inchoate mind of the Iroquois inferred that the locust controlled summer heat; its mere presence was not thus interpreted, but its singing was held to signify that it was exerting its *orenda* to bring on the heat necessary to ripen the corn. In like manner the rabbit sings, and by barking the underbrush at a suitable height, indicates the depth to which the snow must fall. Thus his *orenda* controlled the snow. Again, there is the sentence-word *raterēnnā'ilē** (*haderēnnā'ilē*hā*), which signifies in modern usage, he habitually prays. It acquired this meaning because prayer was not originally a begging for a thing, but because it was an act indicative that he who desired something from the body controlling it must lay down his own *orenda*. The literal rendering of this sentence-word is, "he lays down his own *orenda*," thus indicating submission, defeat, surrender, and, symbolically, plea for life, well-being.

In this manner it appears that primitive man interpreted the activities of nature to be the ceaseless struggle of one *orenda* against another, uttered and directed by the beings or bodies of his environment, the former possessing *orenda*, and the latter, life, mind, and *orenda*, only by virtue of his own imputation; so it was natural for him to infer that to obtain welfare for himself

and his kind and to avert ill-fare, he must needs exert his own *orenda* for that purpose, or, failing in this, he must needs persuade by word, rite, or ceremony, another body or being—a plant or tree, a rock or mountain, a beast or bird, the water, the cloud, the sky, the darkness, and what not—to use in his behalf, the *orenda* of that body or being; but, gradually learning from the hard school of experience that he could do or could obtain some things without the aid and favor of the magic potency of some other body, he regarded himself to that extent only as independent of the effect of the *orenda* of environing bodies. And to influence or persuade other bodies to exert their *orenda* in his behalf or for his welfare, he further reasoned that, for this purpose, he must employ devices and methods which, judging from his own susceptibilities, would be most apt to obtain his own aid and favor under like conditions. He decided, therefore, that he must employ to this desired end, gifts, offerings, praise and flattery or worship, and even self-abasement the most abject. And, hence, further, in the stress of life, coming into contact or more or less close relation with certain bodies of his environment more frequently and in a more decided manner than with the other environing bodies, and learning from these constraining relations to feel that these bodies, through the exercise of their *orenda*, controlled the conditions of his welfare and in like manner shaped his ill-fare, he came gradually to regard these bodies as the masters, the arbiters, the gods, of his environment, whose aid, goodwill, and even existence were absolutely necessary to his well-being and his preservation of life itself. And these relations and the manner of obtaining the favor and gifts of these bodies gradually grew into tradition and vigorous custom, and in the flux of time developed into rite, ceremony, and a more or less elaborate ritual. The one requisite credential to this pantheon was the possession of *orenda*. And the story of the operations of *orenda* becomes the history of the gods.

Only finite relations, finite phenomena, by emphasizing organ-

ization, system, can call forth the feeling of the infinite—not *the* infinite, albeit, as it is understood by the man of science, but something infinite—and hence arise indefinite concepts of masters, arbiters, gods, all having at first independent value. And the concepts of the masters, the gods, are continually recoined to meet varying environment, growing mentation, and the more complex organization of human activities.

Hence religion, albeit a most highly developed expression of human activity, may be defined as any system of words, acts, or devices, or combinations of these, employed to obtain welfare or to avert ill-fare through the use, exercise, or favor of the *orenda* of another body or bodies. But in view of the fact that the primal law of growth is organization through the development and conservation of the congruous, it follows from this definition that any word, any act, or any device, or any combination of these, designed to induce some other body or bodies to use or exercise *orenda* for the purposes indicated above, must justly and essentially be termed religious.

There appears no room to doubt that a living faith and trust in the reality and efficacy of this subsumed potency, this reified figment of incipient mentation, is not only the motive back of the following cited expressions of human activity and thought, but it is also the key to their interpretation;—the alleged performance of miracles; the uncanny practices of witchcraft; soothsaying, divination, prophesying, blessing and cursing; all forms of prayer and worship; all superstitions; the Hell-broth of Shakespeare's three witches; the dogma or belief regarding the possibility of the creation of something from nothing; the slaying of the black ram and black ewe and their devotion by Ulysses to the shade of Tiresias in Tartarus; the mystic use of the Urim and Thummim in the ancient Hebrew sacerdotal cult; the plagues of Egypt, wherein two sets of sorcerers pitted *orenda* against *orenda*¹; the raising

¹ Reference is made here to the signs and wonders alleged to have been performed before the Pharaoh, Bateura-Meriamon-Menephtah-Hotep-Hima, by Moses with his magic rod or staff, the wand of Elohim, as related in the Book of the Exodus, the

of the shade of dead Samuel by the alleged witch of Endor; the remarkable act of circumcision, related in the book of the Exodus, that stayed the power of the God of the Hebrews in his attempt, "by the way in the inn," to slay Moses; the "tree of life also in the midst of the garden and the tree of knowledge of good and evil," the mere eating of which could give eternal life and the knowledge of good and evil; all the arts of wizards, demonology and fetishism, and all the occult craft of the shaman, are one and all the legitimate fruitage of a belief in the reality of a subsumed magic potency inherent in all things. To savage minds it is the executive power of men and devils, angels and gods; it can destroy the living and can as well bring back to life the dead; in fact, it is omnipresent, omniscient, and omnipotent; enchantment, exorcism, the evil eye, relics, holy springs, ordeal, bedevilment, and all the arts of soothsaying, are one and all activities arising from the faith and trust in the efficacy of this subsumed magic potency or *orenda*.

Thus, in the preceding discussion, it has been found that among the Iroquois *orenda*, a subsumed mystic potency, is regarded as related directly to *singing* and with anything used as a charm, amulet, or mascot, as well as with the ideas of *hoping*, *praying*, or *submitting*. In connection with this it may be interesting and instructive to recall the parallel fact that the English

first three of which, it is claimed therein, were likewise enacted by the "wise men and the sorcerers" and "the magicians" who are denominated in the Hebrew text by their Egyptian name, *Charmians*, and who were the chief priests of Raames, Heliopolis, Zoan (Tanis), and Memphis. The reference is especially (1) to the changing of this wand of Elohim or magic rod into a serpent before the Pharaoh and its restoration to its normal state by the mere taking "by the tail" of the mystically wrought serpent, and (2) to the changing of the water of the Nile into blood and its restoration to water "after seven days were fulfilled," and (3) to the bringing forth from this river of a plague of innumerable frogs and their subsequent banishment, and (4) to the changing of the dust of the land of Egypt into a plague of scorpions (or mosquitoes), all of which alleged miracles with the exception of the last, the wise men, sorcerers, and magicians, under the direction of Jannes and Jambres "who withstood Moses," were able to perform and they "did so with their enchantments." But, of a later contest it is said: "And the magicians could not stand before Moses because of the boils, for the boil was upon the magicians," all of which is quite Amerindian in concept.

word "charm," defined in the *Standard Dictionary* as signifying, among other things, "any formula, act, or subject supposed to have a magical influence or power; an incantation; spell; amulet; to put a spell upon; to protect as by a spell; as a *charmed* life,"—is derived through the French *charme* from the Latin *carmen* (*cas-men*), signifying "an utterance in solemn, measured, or melodious way, i. e., a song, oracle, or a magic charm." Cognate with which are *Camēna* (or *Cas-men-ja*), the name of the goddess of song; *cens-ere*, "to declare, pass judgment on," with which may be compared Anglo-Saxon *herian*, "praise." With *Cas-men* the following cognate Sanskrit terms may be fruitfully compared: *çāṁs*, to recite a sacred hymn or text to a god by way of praise; to praise; to make a solemn wish, whether blessing or cursing, resembling in this the Latin *imprecari*; to announce or communicate. *Āçāṁs*, to wish; to hope in, put one's trust in; pronounce a blessing upon, wish good to. *Çāṁsa*, a solemn utterance; imprecatio, a blessing or a curse; cursing (as an adjective). *Çasta*, praised, esteemed as good or lucky; happy, cheerful. *Āças* or *āçā'*, a wish; a hope. *Açts*, a wish or prayer, especially for good or welfare.

Now, the better to set forth the fact that *orenda* is not regarded by the Iroquoian speakers as a synonym of some biotic or psychic faculty, the Iroquoian names for life, soul, ghost, mind, and brain will be cited here, thus showing that *orenda* is not one of these.

The mind is called *o'nikoñrā'* and *erih'ntā'* by the Mohawk, *o'nikō'la'* and *eliēntā'* by the Oneida, *o'nigōñrā'*, *ēiē'dā'*, and *gāiā'dowe'dāshā'* by the Seneca, *o'nikhō'hā'* and *ono'doñniō'srā'* *ēniē'drā'* by the Cayuga, *o'nigō'hā'* and *ēiē'dā'* by the Onondaga, *u'tikē'ye'* and *u'tikē'ne'tce'* by the Tuskarora, *oñdiō'rā'* and *erih'ntā'* by the Huron.

The soul is called *awē'niā'sā'* and *othwa'srā'* by the Cayuga, *aweriā'sā'* by the Mohawk, *othwa'shā'* and *othwā'i'* by the Seneca, *aweliā'sā'* by the Oneida, *othwā'i'* by the Onondaga, *awāriā'sē'* by the Tuskarora, and *onē'nō'kwā't* by the Huron.

The ghost or disembodied spirit is named *o'skô'harâ* and *o'skê'ânâ* by the Mohawk, *djîsgâ'* by the Seneca and the Cayuga, *o'skê'ânâ* by the Onondaga, *o'skô'halâ* and *o'skê'ânâ* by the Oneida, *u'nâwak* and *u'skê'ânâ* by the Tuskarora, and *o'skê'ânâ* and *djîsgâ'* by the Huron.

Life is called *ôn'hâ'* or *otôn'hete* by the Mohawk, *ôn'hâ'* and *odon'hê'sâ'* by the Onondaga, *ôn'hâ'* and *odon'hê'trâ'* by the Cayuga, *ôn'hâ'* and *otôn'hete* by the Oneida, *ôn'hâ'* by the Seneca, *û'hê'* and *u'nê'nhâkt* by the Tuskarora, *ôn'hâ'* and *kion'hê'kwî* (whereby we live) by the Huron.

The brain is called *odjî'droñwâ'dâ'* by the Cayuga, *odjî'coñwê'dâ'* by the Seneca, *otci'seroñwê'tâ'* and *onô'hwarâ'* by the Mohawk, *ono'hwâlâ'* by the Oneida, *odjî'coñwê'dâ'* by the Onondaga, *unê'hwârê'* by the Tuskarora, and *awa'ciêntâ'* by the Huron.

And, lastly, the following terms common to all the Iroquoian tongues are cited with their dialectic and other variations, namely, *o'wîshâ'* or *ga'wîshâ'*, *ô'shâ'* or *ga'shâ'*, *ô'shâ'sdâ'* or *ga'shâ'sdâ'*, *ô'hâ'sdâ'* or *ga'hâ'sdâ'*, *ô'hwî'serâ'* or *ga'hwî'serâ'* or *ga'hwî'srâ'*, all denoting muscular or bodily strength, and, *ga'shâ'sdê'serâ'*, *ga'shâ'sdê'srâ'*, and *ga'shâ'sdê'sâ'*, and *ga'hâ'sdî'shâ'* (the gender sign *a-* may be substituted in these latter for the initial *ga-*), signifying not only muscular strength but also power in general—force, military strength, authority.

Thus it is evident that as employed by Iroquoian speakers *orenda* is not at all one of these psychic or biotic activities.

As vestigial remains of the belief in the possession of *orenda*, magic potency, albeit instinctively expressed, may be mentioned the common practice or habit of persons about to throw a stone or other missile, to blow on it or to asperge it by blowing on it particles of saliva, and doing in like manner when about to use an arrow, bullet, or other weapon. From objects *orenda* or magic potency may pass or be made to pass to actions or words or sounds uttered by the object possessed of the required *orenda*.

So, certain acts, certain sounds or words become sacred and holy. Such is the Sanskrit *dm* which is a word of solemn asseveration and reverent acknowledgment, being a sacred mystic syllable, uttered at the beginning and the end of Veda reading. Its origin is uncertain, but not so the potency of its *orenda*.

PRELIMINARY REPORT OF AN ANTHROPOLOGICAL EXPEDITION TO SYRIA

By HENRY MINOR HUXLEY

Under the leadership of Howard Crosby Butler, an archeological expedition¹ was sent to Syria in the summer of 1899. The work of this expedition was accomplished in two trips: the first occupying eight weeks from the middle of October, 1899; the second lasting from March until June, 1900. On the second of these trips, a section for the study of physical anthropology was added to the three other sections of research to which the expedition was devoted.

At the end of this second trip, the four original members of the expedition left Syria; whereas the writer, under the patronage of Mr B. T. Babbitt Hyde, remained for another year for the further study of physical anthropology.

The summer of 1900 was devoted to acquiring a working knowledge of the vernacular Arabic. For this purpose, I lived for nearly four months in Bḥamdūn, a small village of the Lebanon. With the valuable aid of my Arabic teacher, Sitt Rāḥīl Jurjis Tābit, I was able to collect many of the wedding and funeral songs of the natives of Bḥamdūn, most of whom are Christians, of either the Maronite or Greek Orthodox sects. These songs, besides a considerable number of proverbs and stories, have been phonetically transliterated, and then translated into English. They are now nearly ready for publication.

In the middle of October, accompanied by native attendants, I left Beirūt; after going to Damascus, we marched north to

¹ For the Preliminary Report of this expedition, see *American Journal of Archaeology*, Second Series, *Journal of the Archaeological Institute of America*, vol. iv (1900), No. 4.

Ma'lûla. This village, inhabited by Christians, and the neighboring Mohammedan villages of Djebb 'Adin and Bukh'ah are of particular interest, in that the people still speak the ancient Syriac, as well as Arabic. Traveling about three weeks in the desert to the east of Hom̄s and Ḥamā, we were able to make observations on the fellāḥin of the plain, and on several tribes of the 'Anezi Bedawins. From Ḥamā we marched north to Fān ish-Shemālī and Kaṣr Khulef, in both of which places Greek inscriptions were found. Going north to iṣ-Ṣafireh, we then turned east and reached the Euphrates at Meskinah. The region between Ḥamā and the Euphrates is inhabited almost exclusively by Bedawins: either the nomadic tribes or those who now inhabit villages of cone-shaped houses built of sun-dried clay bricks.

From Meskinah we went north to Membedj, and then through the country of the Turkmān to 'Aintab, the northernmost point which we reached. North of a line between Aleppo and Meskinah, the houses have flat roofs, in marked contrast to the cone-shaped houses between Ḥamā and the Euphrates. Coming south to Aleppo, we next entered Djebel in-Nuṣairiyeh at Djisr ish-Shughr. The Nuṣairiyeh, who have a secret religion entirely distinct from Mohammedanism, are markedly brachycephalic, and resemble the mountaineers of the Lebanon far more closely than the Bedawins of the country to the east. Reaching the sea at Djebleh, we returned along the coast to Beirût.

During the winter months, when travel is very difficult, I remained most of the time in Beirût. For three weeks, however, I made observations on the Samaritans in Nāblus. From a list containing the names and ages of all the living Samaritans, I have obtained the following statistics:

Number of males 15 or more years of age.....	72
Number of females 12 or more years of age.....	44
Number of males less than 15 years of age.	25
Number of females less than 12 years of age.	11

Total number of males.....	97
Total number of females.....	55
Total number of Samaritans, February, 1901.....	152

Of the males, 43 were measured and photographed. A cast of the face of one of the sons of the High Priest was also taken. Besides the work in physical anthropology, observations were made of some of the customs of the Samaritans.

In Jerusalem an attempt was made to measure and photograph some of the Abyssinians, but in this I was wholly unsuccessful.

On the first of April we again went into the field. Starting from Beirût, we marched southeast through Bānyās, Qunêṭrah, Simlîn, and Khufsîn, to Şumakh, on the southern shore of the Lake of Galilee. Most of the important ruins east of the Jordan were then visited: Mķēs, Sûf, Djerash, 'Ammân, Mādaba, and Karak. A few days before our arrival at 'Ammân, the Circassian inhabitants, in digging the foundation for a house, found a large white marble statue of a draped female figure. The head, arms, and feet were missing. The fragment is 132 cms. long, and has a maximum breadth of 69 cms. From Karak we marched south through Tafileh to Petra, where we remained five days. Returning to Tafileh we crossed the Ghôr, south of the Dead sea. From Hebron, we traveled north through the well-known country west of the Jordan. At 'Akka we reached the sea, and returned to Beirût along the coast.

At Jerusalem I examined a few of the Gypsies of Syria. They have adopted the Mohammedan religion and many of the customs of the country. They speak Arabic, but among themselves speak Gypsy fluently. Many of their words have exactly the same forms as are found in Hindu Gypsy words, some of which were sent me by Mr A. T. Sinclair of Boston.

On the various trips the following groups of people were studied: the Christians of the Lebanon; the fellāḥîn of northern and central Syria, including both the fellāḥîn of the mountains and those of the plains; the Bedawins of the Northern

tribes; the Turkmân; the Nuṣairiyeh; the Druses of Ḥaurân; the fellâḥin of the country east of the Jordan; the Bedawin tribes of the same region; the fellâḥin of western Palestine; the Samaritans; and the Gypsies. I attempted to procure some observations on a tribe of Bedawins called 'Arab iṣ-Ṣlêb, but I was able to measure only three individuals. The members of this tribe have a tradition that they are descended from Crusaders who took Bedawin wives. At present they profess Mohammedanism.

The observations taken on the living consisted of a series of measurements, descriptive characteristics, and photographs. The total number of individuals measured was 804. At times the prejudices of the people rendered this work quite difficult; whatever success we attained is due to no small extent to the tact of my native attendant, Miḥem As'ad Dlêḳân. Most of the photographs included only the head and shoulders of the subject, front and profile views being taken on opposite halves of the plate. A device was used for bringing that half of the plate to be exposed, directly behind the lens when the photograph was taken. A series of twenty casts was made.

Of the collections, the most important is a series of twenty-five skulls from the Samaritan cemetery at Nâblus. A series of twelve Bedawin skulls was obtained from Khirbit is-Sûk, near 'Amman. A series of the costumes of the inhabitants of the various regions of Syria was secured. These collections have been deposited at the American Museum of Natural History in New York.

Von Luschan¹ has noted that in Asia Minor there are two very distinct types of people: the one dolichocephalic, the other brachycephalic. He considers that this brachycephalic type, now represented by the Armenians, is a remnant of a completely unified aboriginal population. He infers that the same conditions hold true in Syria, but says that the material from the latter country

¹ "Die Tachtadschy und andere Ueberreste der alten Bevölkerung Lykiens," *Archiv für Anthropologie*, Bd. XIX (1890), p. 31.

is not sufficient for us to judge with accuracy. According to the observations made on the present expedition, there are in Syria, as in Asia Minor, the two sharply defined types: the dolichocephalic Bedawins, of Semitic origin, and the brachycephalic fellahin and mountaineers. In some districts the shape of the head is somewhat modified by the method of cradling, but the deformation is not sufficient to vitiate the value of the measurements. There are many cases of mesocephalic individuals, showing a mixture of the two original types.

The work in Syria was completed by the end of June, 1901, when I returned to America. The publication of the material in physical anthropology will be made in connection with the publications of the original archeological expedition, of which the writer was a member. My thanks are due in particular to Prof. F. W. Putnam, of Cambridge, and to Dr Franz Boas, of New York, who have made most valuable suggestions in connection with the anthropological work.

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ONOMATOLOGY OF THE CATAWBA RIVER BASIN

By ALBERT S. GATSCHET

The Indian geographic names of the South Atlantic states are of great interest. During historic times this section has undergone many changes in population as well as in its physical characteristics, the former being due chiefly to the advent of Europeans who, after increasing in strength, recklessly displaced the aboriginal inhabitants who had either to flee elsewhere or to conform themselves to the new conditions.

The aboriginal appellations which the physiographic features have preserved to the present time in the region south of Ohio river (its rivers, mountains, plains, and islands), are reducible to the languages of six linguistic families—the Algonquian, the Iroquoian-Cherokee, the Siouan or Dakotan, the Yuchean, the Muskhogean, and, to a slight extent, the Timuquanan, or Atimokan, historical traces of which survive about the coast of the Florida peninsula.

Of the streams that flow southward from the Appalachian range, draining the Gulf states and mingling their waters with those of the Atlantic ocean, Catawba river is one of the most important, and with its tributaries forms a basin of considerable magnitude. The Catawba Indians call this stream *Is'wa*, "the river," in the sense of "main river," for they seem to have no specific river names as we have. The entire length of Catawba, or Great Catawba, river is nearly three hundred miles, and its main course is northwest-southeast. Like other large rivers of the region, the Catawba changes its name: first, below Rocky Mount, South Carolina, where it becomes Wateree river, and again after its junction with the Congaree, where it becomes Santee river. The Catawba grape attained its celebrity from vineyards extend-

ing along this river in North Carolina, and it still maintains its fame for the mild wine manufactured from it.

Of the twenty-eight Indian tribes which James Adair¹ mentioned as forming the body or unity of the Catawba "nation," the most important were the Sara or Cheraw, the Sugaree or Shocoree, the Catawba proper, the Wisack or Waxhaw, the Wateree, Congaree, Santee, Sewee, and Pedee. Other tribes farther eastward may not have been of strictly Catawba lineage, though they were members of their confederacy.

Wateree originally was not a tribal, but a local name, for the Catawba verb *watērd* means "to float in the water." Santee river derives its name from *sā'ta*, *sō'ta*, "to run"; *ydyē sonturē*, "the water is running." Sewee, the name of a tribe once settled at the outlet of Catawba river, is from the Catawba *sāwē*, "island," from the fact that it once resided on an island in that stream. The Kayaways, a tribe formerly inhabiting the coast, are so called from *kāia*, the Catawba name of a species of turtle. All these local appellations, and probably many more, are terms from the Catawba language, which belongs to the eastern division of the great Siouan stock.

As to the name of the river, no Catawba term can explain it, nor can the people now point out its origin and signification. It is very probably derived from a word of the Choctaw or Chá'hta dialect of the Muskhogean family, which intruded far to the east, and parallels to it may eventually be discovered. The name seems to be traceable to the Choctaw transitive verb *katāpa*, "to divide, separate, break"; when used as a participle, *katāpa* signifies "divided, cut off, interrupted, stemmed, withheld, headed or headed off," as cattle separated. All these vocables are extracted from Rev. C. Byington's manuscript Chá'hta Dictionary in the Bureau of American Ethnology, which adds the following derivatives: *katāpa*, "a division"; *katāpoa* and *ikatāpoa*, "to divide"; *ikatāpa*, "he cuts off," and "he is cut off, interrupted, precluded";

¹ *History of the American Indians*, 1775.

katapóhli and *ikatapóhli* (with plural of object), "he cuts them off, intercepts, or heads them off."

The same derivation was reached by Mr H. S. Halbert¹ who takes it to be a Chickasaw word: Catarpa, the name of a creek in Oktibbeha county, Mississippi, means "dammed, obstructed," and is so called because the waters at the mouth of the stream were once or repeatedly gorged by driftwood. The country along upper Catawba river is rather low and level, hence such obstructions might easily have taken place in early times as they do today. When John Lawson² traversed the region in 1701 the bayous had combined with the main stream, forming a large lake. Lawson says:

The Indians ferried us in a little vessel over Santee River, four miles and eighty-four miles in the woods, which the overflowing of the freshets had made a perfect sea . . . there running an incredible current in the river, which had cast our small craft and us away. . . . Santee River at this time (from the usual depth of water) was risen perpendicular thirty-six feet, always making a breach from her banks about this season of the year.

Local names from the Creek language are extensively applied along the coast and about the lakes of Florida, such as Palatka, Alachua, and Homosassa, and there is also a sprinkling of Hit-chiti or Mikasuki terms, as Okeechobee, Oklawaha, Micanopy. These are relics of the time when the Yamassi and subsequently the Seminole held the country, and there is no doubt that at least the language of the Upper Creeks (the Creeks as popularly known today) also was extensively spoken on the peninsula. Fontanedo's report of 1575 contains Creek words, like *seletega* (*silitiga*, from *isilitkās*, "I run up to"; *litkās*, "I run," *is-*, reflective prefix).³

¹ *Publications of the Alabama Historical Society*, III, 72.

² *New Voyage to Carolina*, p. 31.

³ "Mémoire sur la Floride," in Ternaux-Compans, *Collections*, XX, p. 22. Fontanedo wrote in 1559. *Silitka* is a personal name among the Creeks even at the present time.

Testimony of the considerable spread of the Mobilian trade language may be found in Dr Sibley's report to the President in 1805¹ and in Woodward's *Reminiscences*.² Although Jeffreys³ compared this "jargon" in its uses with the *lingua franca* of the Orient, Mr J. N. B. Hewitt, of the Bureau of American Ethnology, justly remarks that neither Jeffreys nor any other known author presents specimens of it, consequently it is not positively known whether the Mobilian trade language may be considered as a real dialect form of Choctaw. At any rate it cannot be compared with the Chinook jargon of the Columbia River region, so far as the relations of the latter to the Upper and Lower Chinook are concerned, for it consists largely of Lower Chinook with the inflectional forms dropped.

The Catawba language, as I recorded it among the remnants of the tribe in 1881, seems to be homogeneous in its lexicon, and of southern loan-words I recall only *haksup*, "shirt, garment, coat," which appears in the same form in Creek and in other Muskogean dialects. The largest accession which the Catawba received within the historical period was probably that of the Sara, or Cheraw, but it remains to be seen whether their dialect has influenced that of the Catawba. Other lexical influences may have been derived from the neighboring Cherokee. On upper Savannah river, in northwestern South Carolina, at the place now called Seneca, is the site of a Cherokee town called by them *Isánika*. This term was corrupted to "Seneca," which gave origin to "Isundiga," the Catawba name of Savannah river.⁴

The Gulf states have been the home of other aboriginal languages and dialects, but what their influence upon or contact with one another may have been will perhaps ever remain a mystery. The Yazoo and the Koroa on the Mississippi are known to have been *sui generis*, like the Tonika, Naktche (Natchez), and Shetimasha

¹ *American State Papers*.

² Thomas S. Woodward, *Reminiscences of the Creek or Muscogee Indians*, 1859.

³ *History of the French Dominion in North America*.

⁴ Information from Mr James Mooney.

(Chetimasha), and the same may be said also of the Tiaoux or Tihiu. But the local names applied in the southern end of Florida and recorded by Spanish explorers at the close of the sixteenth century, exhibit foreign elements and may have been imported from the West Indies.

THE PUEBLO SETTLEMENTS NEAR EL PASO, TEXAS

By J. WALTER FEWKES

On a map of the "Reino de la Nueva Mexico," made by Father Menchero about 1747,¹ five pueblos are figured on the right bank of the Rio Grande, below the site of the present city of El Paso, Texas. One of these, called in the legend, Presidio del Paso, is situated where Juarez, in Chihuahua, now stands, just opposite El Paso. The other four are designated on this map as Mision d S^a Lorenzo, Mision d Cenecú, Mision d la Isleta, and Mision del Socorro. Each is indicated by a picture of a church building, with surrounding lines representing irrigation canals, as the legend "riego de las misiones" states. All of these lie on the right bank of the river, or in what is now the state of Chihuahua, Mexico. It is known from historical sources that Indians speaking at least four different dialects, and probably comprising three distinct stocks, inhabited these five towns. The Mansos lived in El Paso, the Suma in San Lorenzo, the Tiwa in Yaleta, and the Piros in Senecú and Socorro; there were also other Indians—Tano, Tewa, and Jemez—scattered through some of these settlements. All the above-mentioned villages had been founded in historic times, or since Oñate first forded the Rio Grande at the Pass of the North in 1598. From documentary sources we learn that Tiwa and Piros were colonized in this region at the end of the seventeenth century, having come down the river with

¹ A copy of this map was published in 1892 by the Kartographisches Institut of Berlin. Although not dated, the legend reads that it was prepared during the administration of Don Juan Francisco Guemes y Orcasitas, who was governor of New Mexico during 1747.

Otermin in 1680, and that the Mansos and Suma were settled in pueblos near the ford almost a century before.

During an exploration of certain ruins in central New Mexico in the summer and autumn of 1901, under the auspices of the Bureau of American Ethnology, the author studied the ancient habitations of the Piros near Socorro and Magdalena.¹ At the close of these studies he visited Senecú, Mexico, and Socorro, Texas, where the survivors now live, in order to gather any current traditions concerning them that might be found to survive. He had also in mind the forming of an acquaintance with the remnants of the Tiwa whose ancestors lived in New Mexico about the northern boundary of the old Piros range. The present article considers especially the Tiwa of Ysleta and the Piros of Senecú and Socorro.

These Indians have practically become "Mexicanized," and survivals of their old pueblo life which still remain, such as their dances before the church, have long lost the meaning which they once had or that which similar dances still have in the pueblos higher up the Rio Grande. The southern Tiwa and Piros are good Roman Catholics, and their old dances are still kept up not from a lingering belief of the Indians in their old religion, as is the case with certain pueblos in which Christianity is merely a superficial gloss over aboriginal beliefs, but as survivals which have been worn down into secular customs. They cannot give an intelligible explanation of the meaning of these dances, because they do not know their significance. Interest in them on the part of the ethnologist is purely as folklore, for they represent a stage through which the dances of the Pueblos ultimately go when the complexion of the population changes from Indian to Mexican. Ysleta is an instructive example of a Pueblo Indian settlement which has become a Mexican town, the number of Americans settled there not being large enough to affect ma-

¹ A special account of the ruins near this town, especially those of the "pueblo" visited by Vargas in 1692, is in preparation.

terially the population. It is therefore instructive to study a pueblo in this stage of transformation.

The notes which serve as the basis of this article were collected on a brief visit to El Paso, in October, 1901. While the author lays no claim to an exhaustive study of the survivors of the Pueblos, he would call attention to a field which offers much to the ethnologist, folklorist, and archeologist. The object of the article in brief, then, is to set forth, in a general way, a few facts regarding the Tiwa of Ysleta and the Piro of Senecú. Since the former are more numerous and their customs less changed, he will begin with them.

YSLETA

The pueblo of Ysleta, Texas, situated on the left bank of the Rio Grande, about fourteen miles below El Paso, is a small village with a mixed population of Indians, Mexicans, and Americans. The Indian name of the village is Chiawipia,¹ or practically the same as that of the pueblo of Isleta in New Mexico, a name which the Hopi also give to the latter village, in which, they say, are settled certain Tiwa whose ancestors once lived in their territory. The name "Ysleta" would indicate its site on an island, and the fact that on Menchero's map it is placed on the right bank of the Rio Grande, while its present site is on the left, may be harmonized by supposing that the course of the river has changed since the map was made.

The most striking building in Ysleta is the church, dedicated to Nuestra Señora del Carmen, the beautiful bell-tower of which can be seen for several miles.

Several references to the settlement and early history of Ysleta may be found by consulting the valuable contributions of Bancroft and Bandelier. The author has taken the liberty of quoting a few lines from the former to account for the existence

¹ Or Chipiya. Note the similarity of this term with *Cipés*, an historic name of former pueblo dwellers along the Little Colorado.

of Tiwa and Piros colonies in this section. "With the 385 natives," writes Bancroft, "that had come with Otermín from Isleta, a few who had accompanied the original refugees of 1680, and some who came later, the padres proceeded to found three new mission pueblos in the south. These were Senecú, Socorro, and Isleta."¹

The author has seen a manuscript copy of a document, dated May 19, 1692, in possession of Father Cordovas, a priest at Ysleta, who claims that the original, now in Mexico, is the earliest existing record of the church. The following legend found on a photograph by the same priest refers to this manuscript: "This document in the name of the King of Spain gives charge of the church of Corpus Christi de los Tiguas en el Reino de la Nueva Mexico de el Distrito de el Paso Canton Bravos, to Fray Joaquín Ynojosa. Years after, the titular saint of the church was changed to St Anthony, the patron of the Indians, Ysleta being then a Tigua village. Later on a petition was sent to the Bishop to change the second titular saint; this request being granted, the church was dedicated to Nuestra Señora del Carmen."

The oldest portion of the present church building is that in which the altar now stands, the tower and façade being of much later construction. The open space before the church is surrounded by a low adobe wall. This enclosure, in which stands a cross, is called the cemetery, and was formerly a burial place, as its name implies, but it is no longer used for that purpose. Here certain dances—survivals of pagan ceremonies dating back in the history of the pueblo to a time when it was practically a

¹ "S. Ant. de Senecú, of Piros and Tompiros, 2 leagues below El Paso (or Guadalupe); Corpus Christi de Isleta (Bonilla, *Apuntes*, MS., 2, calls it S. Lorenzo del Realito), of Tiguas $1\frac{1}{2}$ leagues east of Senecú; and Nra del Socorro, of Piros, Tanos, and Jemes, on the Rio del Norte 7 leagues from Isleta and 12 leagues from El Paso." (Bancroft, *Arizona and New Mexico*, p. 191, note.) If Socorro was then 7 leagues from Ysleta, it was not on its present site, if the distance given is correct. "In '83," according to Bancroft (p. 191), on account of a plot in Socorro to kill Padre Antonio Guerra, the pueblo was "moved to a site nearer Isleta," evidently to its present location.

Tiwan village—occur after mass on feast days elsewhere mentioned.

The site of the old pueblo adjoins this cemetery, from which it is now separated by a street. The cacique remembers that formerly Indian houses were arranged on that site in rectangular form about a plaza, each building being a small one-story habitation made of upright logs chinked and plastered with adobe, forming a type of building called by the Mexicans *jaca*. There still remain a few houses of this kind in the neighboring hamlet of Socorro that are reputed to be among the oldest in the pueblo. Piarote, the present cacique of Ysleta, lives in an adobe house standing not far from what was once a corner of the former pueblo, and other houses in the neighborhood belong to Indians who likewise have dwellings and tracts of land scattered in all directions from the church.

In late years several Tiwa families have moved away from Ysleta to Las Cruces, New Mexico, and other localities along the railroad where they find profitable employment. The governor, Mariano, claims that the town of Tulerosa, near the Mescalero Apache reservation, was settled by Tiwa families from Ysleta, but others deny this. The Ysletenos formerly hunted bison in Pecos valley, and one of the masks used at Christmas in the *Baile de Tortuga*, elsewhere referred to, is made of bison hide.¹ They were therefore well acquainted with the Mescalero reservation, and the springs there were probably favorite camping places.

Many of the Tiwa have served in the army as scouts against the Apache, and among the names of some twenty men recorded by the writer several have discharge papers setting forth the value of their services; others were killed while in the service of the United States. None of the former receives a pension or rations. They have no resident agent or missionary, and, although poor, they are industrious, self-respecting, law-abiding citizens.

¹ This mask was obtained by the author.

In addition to the Tiwa living at Ysleta, there are one or two families in a neighboring hamlet called Zaragosa, across the river in Mexico. About twenty-five persons, whose names are appended, can conduct a conversation in the Tiwa language, and there are as many more who understand the idiom but cannot converse in it.

Men: José Tolino Piarote, Tomal Graneo, Tebucio Olgin, José Maria Montoya, Ponciano Olgin, Patricio Perea, Manuel Ortega, Sebastiano Duran, Alvino Aquiar, Cristobal Aquiar, Pasqual Piarote, Maleno Marqués, Robel Trujillo, Reyes Trujillo, Crecencio Marqués.

Women: Cornelia Colminero, Andrea Piarote, Estefana Montoya, Valentina Ortega, Augustina Olgin, Patricia Montoya, Nestora Piarote, Dolores Graneo, Andrea Marqués, Juana Duran, Juana Graneo.

SOCIAL ORGANIZATION

The Tiwa of Ysleta still retain a survival of their tribal organization, which is set forth in two documents drawn up before a notary, Dr Wahl, a few years ago. These documents, formally signed and sealed, are written in Spanish. The author obtained a copy, a free translation of which follows:

Pueblo of San Antonio de Ysleta, Texas, January 6, 1895.

"We, the undersigned, comprising natives, have assembled for the purpose of making the following regulations, and complying with those duties which our ancestors observed and which we wish to transmit to our children.

"We solemnly bind ourselves, in the first place, to celebrate in the best manner we are able, the festival of our patron, Saint Anthony.

"In the second place, we bind ourselves to respect the native authorities which we ourselves nominate and elect, and also to submit to such punishment as the same native authorities may impose, without complaint or appeal to any other authority regarding matters, personal or domestic, pertaining to us, without prejudice to the general laws of the remaining citizens.

"In the third place, we decree that every failure to respect our native authorities shall be punished, for the first offense, with twenty

hours' arrest; leaving the punishment, however, to the prudence of the same native authorities, should the same person repeat his offense. That this regulation may have force and authority, all desirous of doing so have freely affixed their signatures."

This first document closes with the signatures of the Indians, all in the same handwriting, and the notary's acknowledgment of the transaction. The second document, signed and sealed before the same notary, enumerates the duties of the officers. Freely translated it is as follows:

Duties of the Cacique.

"First Duty: Every year, on New Year's eve, the Cacique Major shall assemble all his people and advise the meeting to nominate native authorities to hold power for the forthcoming year. The same Cacique Major shall give the badges of office in the following order: To the Governor, to the Lieutenant-Governor, to the Alguacil, to the Capitan Major, to the four subordinate Capitans. Indeed all these officials are subject to the Cacique, as likewise all sons of the pueblo of San Antonio, according to the laws and conditions of the tribe. This dependence extends to the Cacique Major to look after his life and the maintenance of his family.

Duties of the Lieutenant-Cacique.

"The Lieutenant-Cacique shall exercise the same functions and act with the same powers as those above stipulated in case he occupy the position of the Cacique Major.

Duties of the Governor.

"This officer, with the badge of his office in his hand as a symbol of administering justice, represents a Justice of the Peace in minor matters, such as civil offenses; he shall punish lack of respect to the sons of the pueblo of San Antonio, and shall give permission for customary dances which are lawfully permitted to the sons of the tribe.

In addition, the Governor is requested to see that fathers of families comply with the sacred duty of teaching the Christian doctrine to their sons, and of celebrating annually the festival of our patron, San Antonio. Lastly, the Governor shall see to it that the sons of the tribe perform, in such manner as may be possible, the marriages and funerals of the natives.

"In conformity with the third clause the Governor has not authority to impose punishment exceeding three days in prison."

Lieutenant-Governor.

"The Lieutenant-Governor is clothed with the same power as the Governor when the duties of the Governor devolve on him."

Duties of the Capitan Major and the Subordinate Capitans.

"To direct the dances in the public plaza and to preserve order during the dance; also to well regulate everything pertaining to hunts of deer, rabbits, and hares, but always after consultation with, and notification of such diversions to, the Cacique Major, who shall never permit them on Sunday or on those days when they are obliged to hear the holy mass as in the Christian faith universal.

"Regarding the dances, it is recognized that they are permitted on the following days only: Christmas, St Anthony's, St John's, St Peter's, St James', St Ann's, and St Andrew's (if the day does not fall at the time of the hunt).

"Lastly, it is the duty of the Capitan Major, aided by his subordinates, to remove from the pueblo of San Antonio every kind of witchcraft and belief contrary to our Holy Catholic Apostolic and Roman religion. No son of the Pueblo of San Antonio is obliged to accept, for example, if so commanded, any sorcery or false belief. It is the duty of all who follow the regulations of the sons of the Pueblo of San Antonio to sign this enactment. On the other hand, those who do not wish to sign it, by the same wish do not regard themselves as sons of San Antonio."

This second document is signed by the same persons as the former, and may be regarded as a constitution of the Tiwa of Ysleta. It embodies certain aboriginal customs, but it is practically of modern character and origin.

The present Indian officers of Ysleta are as follows:

<i>Title</i>	<i>Native Title</i>	<i>Spanish Name</i>
<i>Cacique,</i>	Aikamede,	José Tolino Piarote.
<i>Governor,</i>	Tuwatabode,	Mariano Manero.
<i>Lieutenant-Governor,</i>		Felipe Cruz,
<i>War Captain,</i>	Wilawekamede,	Tomal Granco,
<i>Subordinate Capitans:</i>		Blas Cominero,
		Blas Granco,
		Cristobal Aquiar,
		Aniseto Granco.

INSIGNIA OF OFFICE

Each of the chief officials above mentioned has a baton, or staff of office, known as a *kikawre*,¹ which is held in such high esteem that the cacique spoke of his as "mother," which reminds one of the reverence paid by the Hopi to their so-called *típoni*. The author has examined the staffs of the cacique, governor, and lieutenant-governor, finding them to be similar; and he has been told that those of the remaining officers have the same general form. They are all said to be old, and to have been in possession of the tribe from the time the pueblo was settled; but such assertion is hardly borne out by close examination.

The cacique's staff of office consists of a baton the length of the forearm and diameter of an ordinary walking-cane. It is made of black wood, and is provided with a silver head and two metal tips, one inside the other. There is a silver cross set in the head, and midway of its length is a hole in which a thong is tied by which it may be extended. The governor's baton is like that of the cacique, except that it is made of chestnut-colored wood. The lieutenant-governor's baton is black: it was broken but has been mended with sinew. These badges, as referred to in the documents setting forth the duties of the officers, are insignia of rank and are used as symbols in elections, dances, and races.

DANCES

The most interesting survivals of the old pagan ceremonies of the Tiwa of Ysleta are the dances which are performed in front of the church at the celebration of the festival of their patron, St Anthony, at Christmas, and on the days of St John, St Andrew, St Peter, and St James, as mentioned in the document above given. These dances differ but little from the secular dances, or *bailles*, which occur in winter and at other times.

¹ The church is called *kikawre-missale*, signifying "house containing sacred objects of the mass," a compound of Tiwa and Spanish in which appears the name of the chieftain's staff.

*Shidfürd, the Rattle Dance*¹

This dance, which occurs after mass in the festival of the patron saint, is one of the most important of their ceremonies. It consists of two parts²—the first with two male and two female participants, the other with many men who carry rattles from which it takes its Tiwa name.

These dances are first performed in the old cemetery before the church, after which the dancers visit in turn the houses of the majordomo, Manuel Otero, George Piarote, and Patricio Perea. It closes with a feast at the house of the majordomo, after which all return to the church.

*Newafürd, the Mask Dance*³

The dance in which two men are masked is celebrated on Christmas afternoon and is sometimes called *Baile de Tortuga* from the turtle-shell rattle employed. A drum is used in this dance, and the men carry gourd-rattles in their hands. The dance is first performed before the church, and then in the houses of the cacique, governor, lieutenant-governor, sheriff (*capitan de guerra*), and other officers, on the three following days. It is danced on the fourth day by children, who imitate their elders.⁴ The two participants wear masks, and one of them represents a male, the other a female personage. The mask of the latter is made of buffalo-skin and is painted red and yellow. These men are called *abuelos* (Spanish, "grandfathers," "ancestors"), and they function as clowns, frightening little children. A little girl, to whom the author showed the mask, called it a *coco*, a Spanish term for "bogy."

*Poafürd, the Red Pigment Dance*⁵

This dance, which occurs on the festival of St John, was thus described to the author by the cacique: Twelve women, forming

¹ *Shid*, "rattle."² The former called *Shapozane*; the latter, *Shidfürd*.³ *Newa-de*, "mask."⁴ The Hopi children also have a masked dance in imitation of their elders.⁵ *Poapütä*, red pigment.

two lines, stand facing each other, and between them passes another, singing "*Ha-wi-na-a-ε!*" In this festival, food and other stuffs are thrown to the spectators. One of the women wears two feathers in her hair. The dance lasts one day and is called the *Baile de la Flecha*. The same song, "*Ha-wi-na-a-ε,*"¹ is sung in the Hopi harvest festival, when food and other objects are also thrown to spectators.

Kufura, the Scalp Dance

In this old war dance, which is no longer celebrated, both men and women formed a ring around one of their number—a woman who held aloft a scalp tied to a stick. A warrior danced beside her, and at the close of the dance ran to the river and plunged his head under the water four times.

Furd-shuite

This dance occurs during the time of the carnival, and in it the participants are divided into two parties, each having a drum. It takes place in the houses of the cacique and other Indians.

*Nakupura, the House Dance*²

While the author was at Ysleta, several secular dances were performed by the Indians in one or another of their houses. These dances were characteristically aboriginal and closely resembled those celebrated on festival days before the church. Permission for them is obtained from the governor, who, in fact, gave one of those witnessed by the author in his own house. The dance began about 9 o'clock, but for some time before that hour a young man sat at the entrance to the house, violently beating a drum made of an earthen jar, and singing a song with monosyllabic words. Later this youth went inside, where he was joined by other singers, forming a chorus. Several of his companions clapped their hands in time with the songs, as in certain characteristic Spanish dances.

¹ The Hopi, who call this harvest festival *Hewinakwi*, undoubtedly derived it, as did the Zuni (who call it *Onwinakwi*) from Rio Grande colonists. ² *Naku*, house.

There were two distinct figures, or rather two kinds of dances, practically differing in the number of participants. In the first kind, two persons, a man and a woman, took positions facing each other on opposite sides of the room. These began the dance by beating time with their feet, at the same time almost imperceptibly swaying their bodies to the beat of the drum. As the drumming continued the two dancers approached each other, and the man put first one hand, then the other, on the woman's shoulder, at the same time dancing with a sort of shuffle, like that of the Bison dance at Hano. Spectators and those not taking part in this dance were seated about the room.

Several men and as many women participated in the second figure of the dance. Two lines, one of men, the other of women, faced each other and opened the dance with slight movements of their bodies. Both lines then turned, faced the drummer, and marched around the room to the opposite side, as in the well-known "Virginia reel." The step, song, and drum accompaniment recall the solemn religious *Kateina* dance of the Pueblos, but, unlike them, is secular and accompanied with merriment.

FOOT-RACE (*Kicekwewehim*)

The Ysleteños have a foot-race strictly comparable with that of their northern kindred. It occurs at midday, on Palm Sunday, and in it the contestants divide into two groups of about half a dozen men each, distinguished by facial painting. The course is from the house of the cacique, past the church, and along the main street. The cacique stands at the place of starting, holding a bow and arrow, and calls out three times. First he shouts, "*We-wa!*" when all get ready; the second signal is "*We-cho!*" when he draws the bow fitted with an arrow; the third signal is "*Pa-cho-win!*" when he shoots the arrow in the direction of the course, and the runners start.¹

¹ The words used by the cacique are apparently those for "one, two, three," respectively. The numerals and the method of formation of the larger numbers may be seen by a study of the following: One, *wama*; two, *wini*; three, *pachowin*; four,

In awarding the prizes, the cacique receives the first prize and the winners the second; but other participants are also rewarded. The object of the race, they say, is for rain, and the shooting of the arrow a symbolic act to aid the runners as well as to indicate the course.

RABBIT-HUNT (*Shiuto*)

Both the Tiwa of Ysleta and the Piro at Senecú still have rabbit-hunts in which aboriginal elements survive. The war-chief is leader of the hunts, but permission for them is always asked of the cacique or the governor. The hunters having assembled in the field, a fire is first built and a section of country surrounded by the huntsmen. The men, forming a ring, close in, shouting "*Hotcha-pe-we-a-newa!*" at the same time killing the rabbits with sticks and other weapons.

When the hunters return home with their rabbits, the women rush out to meet them and to seize the game. If, as sometimes happens, two women grasp the same rabbit, the war-chief divides it between them. In old times, they say, the dead rabbit was sprinkled with sacred meal (*tlúka*), which, however, is not now made or used in Ysleta.

LANGUAGE OF THE YSLETEÑOS

Ysleta affords a good opportunity for the collection of material for a knowledge of the Tiwa idiom; but such work must be done at once, as a speaking knowledge of this variant, if such it be, of the Tiwa, will probably not survive the present generation. No Ysleta child can at present speak the language, and those adults who can converse in it are old men and women. It is imperative that philological studies among these people be made at once, for it will soon be too late.

The special interest attached to a study of the Ysleta Tiwa is, of course, for comparison with the Tiwa of the pueblos of Sandia

wiran; five, *paniowa*; six, *malle*; seven, *weede*; eight, *wahang*; nine, *tetchem*; ten, *te*; eleven, *lewia*; twelve, *lewisl*; twenty, *wede*; twenty-five, *wete-paniowa*; thirty, *pacho-atr*; forty, *wiawia*; fifty, *panloate*; one-hundred, *chute*.

and Isleta in New Mexico. It has been known that the idiom of the pueblos of Taos and Picuris has Tiwan affinities, but the Ysleteños say that it is very different from their language. Several years ago an old man went from Taos to Ysleta to live, but he later settled in Senecú, where he died recently. His speech was incomprehensible, his native tongue differing greatly from that spoken at Ysleta. Some of the southern Tiwa have visited Isleta, New Mexico, and claim, as one would expect, that the language of the two pueblos is practically identical, differing only in minor details. During his visit to Ysleta, the author recorded a considerable Tiwa vocabulary, which he hopes later to compare with the northern Tiwa. These words were obtained during several councils with the chiefs, which generally lasted late into the afternoon, when the angelus sounded from the bell-tower of the neighboring church. At the close of these councils, the cacique, Piarote, repeated a long Tiwa formula, or prayer, with which other Indians were familiar. It would be interesting for one who seriously takes up the linguistics of the Ysleteños to transcribe this prayer as a specimen of their language. All these Indians at present speak "Spanish," but when together the old men converse in their native language. The more aged, in fact a majority of the adults, can neither speak English nor write their own names.

There still remain in Ysleta survivals of the former clan system of the Tiwa, in which the descent was matriarchal. All have Spanish baptismal names, and a few have Tiwa names. They assert that when the latter were given them, an aboriginal rite in which water was used was performed. The Tiwa name of Piarote, the cacique, is Shiu-tusan (Eagle-tusan); the governor, Mariano, Yekap-tusan (Corn-tassel-tusan). Another man is called Yen-tusan (Mountain-tusan); and still another, Thūwirpo-tusan (Rainbow-tusan).¹ None of the children now have Tiwa names.

¹ The root *thūr*, meaning sun, occurs in *thūmino*, sunrise; *tathūakin*, sunset. Apparently the idiom of Ysleta differs somewhat from that of their kindred in Isleta

The Ysleta Tiwa have several very suggestive folktales, to which the author can only refer at this time. He listened to several, but it was said that there were many more, all of which are well worth collecting. They retain traditions of the *Shipapu* or *Shipapūnai*, the ancestral opening in the earth out of which the races of men originally emerged, and they declare it to be a lake in the far north.

So far as their clothing is concerned, it is impossible to distinguish the men and women of Ysleta from their Mexican neighbors; even the want of a beard not being always a distinguishing trait among the men. One man was seen with long hair, but it was not tied in the usual Pueblo fashion. Several wore moccasins, and one a leather wrist-guard.

The houses are not characteristic, and exteriorly there is nothing in the present appearance of the village to lead one to suspect that it was once a purely Indian pueblo or that at present any people of Indian blood inhabited it.

One or two old Pueblo customs are still kept up by the Ysleta Tiwa. They know how to use the fire-drill and the fire-stick (*fukurisla*), and how to kindle fire with them, although they generally use flint-and-steel or matches. Of their weapons several bows and arrows were shown the author, and he has also seen rabbit-sticks, a lance, and a drum of aboriginal manufacture. One or two women know how to make paper-bread, which they call *pahnshave*,¹ and to color it into various tints. They at times grind corn (*ae*) on metates which have an ancient appearance, and one of the old women said that this custom was common in her childhood. She added that while the women were thus at work over a mealing-stone the men sang, beating a drum or folded sheep-skin. A diligent search for aboriginal pottery in Ysleta was not successful; a few old pieces were found, but they

and Sandia, as would be expected from the two centuries of separation. If the termination *tusaa* means people, or clan, its phonetic relation to "Tusayan" is highly significant.

¹ Apparently related to the Spanish *pasta*.

were very rude and probably Mexican; nevertheless, all said that in former times the Tiwa women were good potters and made black ware like that of the Santa Clara Indians.

THE PIROS SETTLEMENTS NEAR EL PASO

The survivors of the Piro live in the hamlets of Socorro and Senecú, the former situated in Texas, about three miles below Ysleta, and the latter on the opposite or right bank of the Rio Grande, about six miles from Juarez, in Mexico. The settlement at Socorro¹ is small, and while there are at present only a few families that claim to be of Indian blood, none of them speak the Piro idiom. They have no tribal organization, and the town is thoroughly Mexicanized.

It is commonly said in Ysleta that the Indians of Socorro are descended from Piro and other tribes, and that their ancestors spoke differently from the Tiwa,—in fact more like the Senecú people. Piarote, the Ysleta cacique, states that in his youth the irrigation ditch of Socorro was called "*acequia de los Piro*," implying that Piro Indians were settled in this pueblo in old times. The fact that the native language has vanished, and that Jemez and Tanos Indians were among those colonized there, partially explains the total disappearance of their language. The author visited one or two old men who claimed to be pure Indians, but they could utter not a word of Piro, and one of them apologetically said that even his father was totally ignorant of any language but Spanish.²

SENECÚ

The pueblo of Senecú,³ in which the Piro who once lived in New Mexico were colonized at the close of the seventeenth century, is situated in Chihuahua, about six miles from Juarez, on

¹ The Ysleños speak of Socorro in New Mexico as *Socorrito*, "Little Socorro."

² Later information reached the author that there is an old man living near Socorro who speaks the Piro dialect.

³ The word *Seneca* is of Piro origin, and was formerly applied to a New Mexican pueblo where San Antonio now stands.

the right bank of the Rio Grande. It consists of a small cluster of adobe houses, in the midst of which rises an old church containing many ancient *santos*, a few old paintings, and interesting altar paraphernalia.

The majority of the Piros live in or near Senecú. They possess a tribal organization, with a cacique (who is also custodian of the church), a governor, a war-chief, and subordinate officials identical with those of Ysleta.

The following names of Piros Indians were obtained at Senecú: Augustin Allegro (cacique), Pablo Allegro (governor), Victoriano Pedraza (War-chief), Casimera Pedraza, Valentin Gonzales, José Maria Podraqua, Vicente Paiz, Caspio Paiz, Dolores Allejo, Juan Delgado, Nicasio Alban, Tomas Ortiz. — Ortiz, Toredo Podraqua. In addition to these there are many women whose names were not recorded, making in Senecú fully fifty persons who may be called Piros Indians.

The Senecú Piros perform dances in the open space before the church building, and are accompanied by a drum and rattles. They are practically secularized pagan dances which have lost all their aboriginal significance. These occur after mass on the festival of their patron, St Anthony, at Christmas, and on the festivals of St John, St Peter, St Ann, and others.

The old drum used in these processions and dances is still preserved in one of the houses not far from the church. It consists of a hollow log with a piece of rawhide stretched over each end, closely resembling those used for the same purpose by the Pueblos higher up the Rio Grande. The drum employed in their secular dances, of which they have many, consists of a jar with skin stretched over the top.

The author saw in the village several hand rattles and one or two bows and arrows. It was not learned whether masks were worn in their dances, inquiry sufficient to decide that point not being pursued. The Senecú Indians have rabbit-hunts and foot-races similar to those of other Pueblos.

The Piro's language, as a means of conversation, has practically disappeared, as no one at Senecú or Socorro now converses in it; but there are still remembered many words which, if recorded, would form a larger vocabulary than any known to exist.¹ There may be other Piro's, living in other pueblos, who know more of the language than do the Senecú people. The governor of Senecú claims that there are Piro's living at a place in Mexico called Ajotitlan, but the author does not know the situation of the settlement.

The writer visited the church of San Lorenzo, about two miles from Senecú, but was not successful in finding ethnological traces of the Sumas. The present church building is a new one, the fourth of its name, the others, at least the last, the Ysleteños declare, having been destroyed by freshets.

An instructive survival of Indian customs at San Lorenzo is a dance which occurs before the church, when a masked personage, called Malinche, appears. Malinche is a common modern name of a masked dancer, occurring throughout the Nahua region of Mexico, and its existence at San Lorenzo, as well as in some of the New Mexican pueblos, is significant. About the middle of November fires were kindled at night on the hills near El Paso and Juarez. The explanation given the author was that these fires were to guide Moctezuma, a Messiah, who, folklore has it, will come down the Río Grande and cross the river at this point.

It is suspected that there may still be traces of Suma blood, and perhaps survivals of their customs, at Samalayuca, in Chihuahua, where these Indians were early colonized, but he was not able to visit that place. No studies were made of the survivors of the Mansos near Juarez.

The treatment adopted in the preceding pages is intended to be ethnological rather than historical. Fortunately these pueblos

¹ The Bureau of American Ethnology has a small vocabulary of Piro's words recorded by John Russell Bartlett.

have been studied from both these aspects by Bandelier¹ to whose valuable researches the writer refers with great respect. As there still remain many important data to be gathered regarding both the history and the ethnology of the El Paso pueblos, the author hopes that in these pages he has done something to attract attention to the immediate necessity of additional studies in this locality.

¹ *Final Report*; Archaeological Institute of America, Amer. ser., III.

THE WORSHIP OF STONES IN FRANCE

By PAUL SÉBILLOT

TRANSLATED BY JOSEPH D. McGUIRE

If archeologists who, for half a century, have with so much zeal drawn up the catalogue of megalithic monuments in France, who have described, measured, and even at times made drawings of them, had with the same care made inquiries concerning the views to which they have given rise among the country folk, we would be much better informed than we now are concerning this particular folklore. Some investigators have shown carelessness; others, after making certain inquiries which brought forth only obscure or evasive replies, have become discouraged; yet others, more persevering and skilful in obtaining the confidence of the peasants, have been more fortunate. But even to these latter everything has not been told. There are ceremonies of which the people do not willingly speak, either because of their sacred character, which should not be divulged, or because of the ridicule which might be made of them, by the inhabitants of the towns, concerning the traditional services of a strange and grotesque character which are not related to Christianity and which are remote from existing customs. This is probably the reason why it is that, in the center and south of France, or in the Ardèche and Aveyron, rough stone monuments are so numerous, yet have developed so few facts. Owing to the life led by the inhabitants and the relative isolation of this region, the old customs and ancient beliefs are better preserved than they are in those places which are more thickly populated and more open.

Up to the present time the geographic distribution of observations made concerning the survival of the worship of stones

is interesting to study, though one cannot draw definite conclusions from them. The most numerous and most typical monuments are found in western France. Out of one hundred and fifty of this class which are recorded, about one hundred are found in the ancient provinces of Brittany, Poitou, and Normandy, where popular traditions, it is true, have long been studied; except in the first locality, however, they are not rich in megaliths. Another, less important, group corresponds to the Orléanais, to Île-de-France, and to Picardy. In the east, Burgundy alone furnishes a curious collection of facts; in the south, no appreciable numbers are encountered, except in certain parts of Provence and Languedoc. Outside of these localities, which constitute scarcely a fourth part of France, only isolated instances are noted. But it is probable that this void is due to lack of energy, or of familiarity on the part of investigators, for several of these localities have preserved megalithic monuments, and in places numbers of them, and there have been found there many curious facts which are connected with other folktales.

It may be concluded that we are far from knowing all the practices now in use, but those which up to the present have been established suffice to demonstrate that, after eighteen centuries of Christianity, there yet exist in France very apparent vestiges of a stone worship more ancient than Druidism. It evidences itself in two aspects—one is purely pagan, in which it is almost clandestine and often individual and not easily discovered; in the other the ancient rite is covered with a veneer of Christianity, under which it is easily recognized, even where the Church, in the hope of destroying or of at least transforming it, has appeared to give it a sort of consecration.

In this study I have collected references to those practices which are herein noted, whether they were connected with natural stones, remarkable because of their peculiarities, or whether they were connected with veritable megaliths; and I have also assembled those which often present no Christian characteristics

and which do not differ from them except by a slight though visible intervention of modern religion.

STONES THE ABODES OF SUPERNATURAL BEINGS

It is probable that many centuries before our era the people of Gaul believed, as did many contemporaneous groups who were little advanced in civilization, that particular stones, because of their size or shape, or because of their odd form, were the abodes of supernatural beings which communicated to them a sort of power. This view still exists in France, and numberless contemporaneous legends relate that enormous rocks, or rocks of singular appearance, have been inhabited by the fairies or in rarer instances by hobgoblins; they have only very recently ceased to reside in them, and at times even now they are not very certain that these personages have departed from them.

Certain of these stones are considered as being powerful and sacred, and people yet continue to beg of them luck and happiness, and associate with them performances which, by their rudeness, coarseness, and odd appearance, suggest great antiquity. These rites have probably preceded those of like character, modified at times, which more civilized tribes have conducted near the rough stones set up by the hands of men, or even on monuments themselves. One may call this worship *pre-megalithic*, and it appears to be the oldest, especially when the practices still take place on natural stones.

SLIDING AND RUBBING

Sliding (*la glissade*), the best-preserved of the pre-megalithic forms of worship, is characterized by the contact, at times brutish, of a part of the person of the believer with the stone itself. The most typical examples which have been preserved (and as the rites have no doubt generally been carried on in secret, much has escaped the observer) are in relation to love and fecundity.

In the north of Ille-et-Vilaine are a series of large blocks, at times, but not always, worn into cups, which have received the significant name of "Roches Éciantes" because the young girls, that they may soon be married, climb to the top of them and let themselves slide (in patois *écrier*) to the bottom; and some of them, indeed, are to a certain extent polished because of the oft-repeated ceremony, observed by numberless generations, which we are assured has been practised there.¹

At Plouër, in the French portion of the Côtes-du-Nord, the girls have been, from time immemorial, *s'écruser* on the highest block of white quartz of Lesmon, which has a rounded pyramidal shape. It is very smooth on the side on which the sliding is done, and this polish is due to the numberless generations which, we are assured, have performed the practice there. In order that she may know whether she will be married within the year, the young girl, before letting herself slide, should turn up her skirts, and should she succeed in reaching the bottom without rubbing off the flesh, she is assured of soon finding a husband.²

At Mellé (Ille-et-Vilaine) the "Roche Éciantie" was worn full of basins; on the rock of the same name at Montault, a neighboring parish, inclined at an angle of 45°, there were visible evidences of numberless girls who had there *écrites*. After the sliding it was necessary to place on the stone, which, however, no one must see done, a little piece of cloth or ribbon.³

This custom has been shown to exist in localities quite far from Brittany. The day of the feast of the patron, at Bonduen, in Provence, the young girls who wished to marry have for a long time gone to slide on a rock, behind the church, which forms an inclined plane, and which has become polished like marble. This performance was called *l'escourencho* (barking).⁴ Those of the

¹ Danjou de la Garenne in *Mémoires de la Soc. Arch. d'Ille-et-Vilaine*, 1882, pp. 57-59.

² Paul Sébillot, *Traditions et Superstitions de la Haute-Bretagne*, 1, p. 49.

³ P. Bésier, *Inventory des Mégalithes de l'Ille-et-Vilaine*, pp. 100-101.

⁴ Béranger-Féraud, *Superstitions et Suroccurrences*, II, p. 177.

valley of Ubayette (Basses-Alpes), for the purpose of finding a husband and to become fruitful, let themselves slide down an ancient sacred stone in the village of St Ours.¹

La glissade appears rarely to have been practised on true megaliths, for the reason that they rarely present the inclination necessary to its accomplishment. It is, however, said at Loc-mariaker, in the Morbihan, that formerly every young girl who wished to marry within the year, on the night of the first of May got on the large menhir, turned up her skirts and let herself slide from top to bottom.² The menhir mentioned was the largest one known; but it is now broken in four pieces which lie on the ground; according to most authors it was still standing at the beginning of the eighteenth century. This custom, which could not be followed when the stone stood vertical, twelve meters in height, is, then, relatively modern, yet it is possible that the young girls of the locality have come to follow, on the pieces, an ancient custom which was formerly held on some natural stone in the neighborhood.

In the Belgian *wallons* they had somewhat modified this custom, which was practised on the rock of Ride-Cul, near a chapel which they irreverently called "Notre Dame de Ride-Cul." Every year, on the 25th of March, this was the center of a pilgrimage, and the young people, both boys and girls, seated themselves on the top of the stone on little fagots of wood collected near by; then they let themselves slide down the rapid decline. From the incidents of the descent they drew omens and said: "If there is an upset (*glissement interrompu*), it is a sign that they must wait; if there is a collision, it is that they are in love; if there is a shock, it is a sign that they do not love; if there is a collision followed by a rolling off, it is that they have agreed." They were not allowed to make the test over again.³

¹ Girard de Rialle, *Mythologie Comparée*, p. 29.

² Lionel Bonnemère in *Revue des Traditions Populaires*, ix, p. 123.

³ *Wallonia*, v, p. 13.

It is not impossible that a great rock near Hyères (Var), which is called the Sliding Stone, formerly served the purpose of a rite analogous to those here described, and that this stone was merely the survivor of a prior one. The young girls wishing to marry within the year go to it and put on its summit a bouquet of myrtle; at the end of ten days they return, and if the myrtle is still on top the wish will come true: should it, however, have fallen off, they must wait.¹

This old and rude custom was observed only by those young girls who were anxious to have husbands—never by the men. It appears, indeed, that there may be cited rare instances in which the rite was performed after marriage. In some parts of Aisne it constituted a sort of ordeal which in later times assumed a facetious character which it did not formerly possess. In several villages there was a stone for the bride, upon which she was obliged to get on her marriage day. She sat there on a sabot and let herself slide the length of the incline. According to what happened at the bottom,—whether she arrived easily or without obstruction; whether she went to the right or to the left, or kept in the middle,—conclusions were drawn which were always expressed in obscene language; and if, for example, the sabot broke on coming to the bottom, the cry "She has broken her sabot!" would be ironically hallooed into the husband's ears.²

In several localities in France, at quite a distance from where this ceremony occurred, the expression "having broken her sabot" was equivalent to saying one had lost her virtue. This ceremony, which is almost always performed in connection with love affairs, appears also to have been employed to facilitate childbirth. Thus far, however, it has only been observed in Ain, a league from St Alban, near Poncin, where pregnant women, as late as the nineteenth century, in hope of having a happy de-

¹ A. de Larive in *Revue des Traditions Populaires*, XVI, p. 182.

² Edouard Fleury, *Antiquités de l'Aisne*, I, p. 105.

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livery, let themselves slide from the top of a flat rock which is considerably inclined.¹

Founded also on belief in the virtue in stones, the custom which may be designated by the name "rubbing" was more clearly phallic than was *la glissade*, as it often consisted not so much in the contact of the hind-parts of the suppliant, as in rubbing the bare navel, or stomach, or perhaps the genital organs themselves. It appears, in fact, that the observers have not always described this custom without certain eliminations. Natural stones, or those erected by the hand of man, presented a relief of round or oblong shape, the appearance of which recalled a phallus and had probably suggested the act which was accomplished by means of it, and which, in a primitive period (and perhaps even now), constituted a sort of sacrifice to the genius of the stone. If the rapid slide gave the woman a shaking analogous to that of the "gravity railroad," the rubbing with the consecrated part of the stone might raise in them sensations of another nature.

At Carnac the young girls who wanted a husband undressed completely and went and rubbed their navels against a menhir especially devoted to this usage. The boys of marriageable age kept careful guard at a respectful distance from the place where the ceremony was practised.² In Eure-et-Loir they turned up their skirts, and in the evening rubbed their stomachs against a projection of the Pierre de Chantecoq, also called Mère aux Cailles, which is at a suitable height.³ Toward the middle of the nineteenth century love-sick girls gave themselves up to the same practice on a stone of the covered way of the Roche Marie, near St Aubin du Cormier (Ille-et-Vilaine), which is now destroyed.⁴

Similar observances took place after the marriage, and in Finistère, at all events, the newly married people both took part.

¹ Aimé Vingtrinier in *Revue du Sédent*, Avril, 1900.

² *Matériaux pour l'Histoire de l'Homme*, x, p. 123.

³ Gustave Fouju in *Revue des Traditions Populaires*, x, p. 673.

⁴ Paul Sébillot, *Traditions de la Haute-Bretagne*, 1, p. 48.

The couple went afoot to the menhir of Plouarzel, the largest in the department, which has on two of its opposing faces a round knob at about a meter's height. After having partly undressed, the woman on one side and the husband on the other rub their stomachs against one of the knobs. The man thinks, in acting thus, to have male children rather than girls, and the woman hopes in that way to be the mistress of the household. Near the market town of Moëlan newly married people rub themselves, for a like object, on a menhir which has an unevenness.¹ I am assured that the custom carried out on the stone of Plouarzel has recently become modified: the young married couple go there the second night after their marriage; the wife embraces the menhir from one side and the husband from the other, and if their lips happen to be just opposite one to the other the couple are assured of having male children.

In Eure-et-Loir the young women who desired to have children rubbed their abdomens against a rough place in the Pierre de Chantecoq. This stone had, as we have seen, the power of obtaining husbands for them.² The women of the neighborhood of Simandre (Ain) accomplished the same object on the menhir erected there.³ At St Ronan (Finistère) the young married people a few years since (and it is not certain that they do not still do so) came and rubbed their abdomens against the Jument de Pierre, a colossal stone standing in the middle of a moor and resembling a fabulous animal.⁴ To be confined "every seven months" the women went to render the same homage to the Pierre Longue, near Dax, in Landes.⁵ About the middle of the nineteenth century, the women of the country of Luchon, in order to be fruitful, rubbed themselves against a menhir on the mountain of

¹ Paul du Châtelier, *Inventory des Monuments Mégalithiques du Finistère*, p. 24.

² Gustave Fougère in *Rev. des Trad. Pop.*, x., p. 673.

³ Tardy, *Le Menhir de Simandre*, p. 3.

⁴ A. Le Braz, *Au Pays des Pardons*, p. 249.

⁵ J. F. Bladé, *Contes de Gascogne*, II, p. 378.

Bourg d'Oueil and they embraced it with fervor.¹ Several of these blocks had the reputation of causing women to be fruitful. At the end of the eighteenth century, sterile wives rubbed themselves on two rocks of Locronan (Finistère) where the wheels of a cart which carried the body of St Ronan left an impression. They assert at Cambry that the mother of the Duc de Coigny owed the Duke's birth to this operation twenty years after the marriage of his father.² At Sarrance (Basses Pyrénées) the women, saddened by not being mothers, came and devoutly passed and repassed on a little rock named the "Rouquet de Sent Nicoulas."³ At St Étienne, in Coglès (Ille-et-Vilaine), they rubbed themselves a short time since on a mushroom-like formation on a rock which has on its summit a superb basin.⁴

In Auvergne this practice, slightly christianized and doubtless modified, according to tradition, was performed at the chapel of Orcival where sterile women, after having made three times the turn of a pillar, came and rubbed themselves against it.⁵

Rubbing against stones was not only efficacious in affairs touching love or fruitfulness; recourse was also had to it when it was desired to gain strength or to recover health. Up to the present time the most typical facts have been shown in Breton localities, and several of the stones to which they address themselves bear the name of some biblical hero renowned for strength, and that of a holy Breton bishop to whom a similarity of name has very likely been worth the privilege.

At Plœmeur-Bodou (Côtes-du-Nord) to give strength to the children and young people they rub their loins against the stone of St Samson, near the chapel dedicated to that saint.⁶ The rock of the same name at Trégastel had a hollowed-out place

¹ Julien Sacaze, *Le Culte des Pierres dans le Pays de Luchon*.

² Cambry, *Voyage dans le Finistère*, p. 278.

³ V. Lespy, *Proverbes de Blarn*, 2d ed., p. 144.

⁴ P. Bézier, *Inv. des Mûs. de l'Ille-et-Vilaine*, p. 111.

⁵ Pommerol in *l'Homme*, 1886, p. 623.

⁶ G. Le Calves in *Rev. des Trad. Pop.*, v, p. 93.

used by the pilgrims,¹ the same as in the menhir at St Landunvez, Finistère, where it was the shoulder that was rubbed.

In passing by Guimaec, the pilgrims who go to St-Jean-du-Doigt rub their backs against the highest one of thirteen stones of a megalithic monument of oval form called Bez-an-Inkinèrez ("Tomb of the Spinner"), in the hope of being preserved from rheumatism.² Many persons accomplish the same observance on the shaft of the cross of the Sept Douleurs ("Seven Griefs") at the town of Batz (Loire-Inférieure), which is very ancient and has probably taken the place of a menhir.³

ASCENT OF AND PAUSING ON STONES

In climbing up on stones remarkable for their peculiarities, or stones difficult to mount (at times even to sit on them), it was supposed one could obtain favors similar to those which were obtained by sliding or rubbing. Persons who wished to marry with little delay had to climb to the top of the upright stone of Colombiers, deposit a piece of money, and then jump down from the top. Two other stones in the neighborhood of Bayeux were the objects of similar observances.⁴ Those who could get to the top of the menhir of St Samson (Côtes-du-Nord) were assured of being married within the year.⁵ To obtain this result it is necessary that the young girl get up on the basin stone of St Étienne at Coglès (Ille-et-Vilaine) on which is clandestinely performed the rite of friction, that she remain there upright, and that she does not blush before the pilgrims forming the assembly at St Eustache.⁶

In the neighborhood of Fougères there is a "Devil's Chair," on which it suffices if one sits during a particular time (at a

¹ A. Descubes in *Rev. des Trad. Pop.*, 8, p. 375.

² Paul du Châtellier, *Méz. du Finistère*, p. 71.

³ *Le Bourg de Batz, Histoires et Légendes*, 1898, p. 158.

⁴ Amélie Bosquet, *La Normandie Romanesque*, p. 176.

⁵ Paul Sébillot, *Trad. de la Haute-Bretagne*, 1, p. 52.

⁶ A. Dagnet, *Au Pays Fougères*, p. 102.

particular period of the year), in order that he or she whom the one had in view may finish by reciprocating his love.¹

Other stones were associated with ancient marriage customs, and there were some, as for example the *Pierre à la Mariée*, of Graçay (Cher), upon which a bride had to dance on the day of her marriage, which bore a name corresponding to this ceremony.² In the Basses-Alpes they called "*Pierre des Epoux*," a conical stone to which the nearest relations of the husband conducted the bride after the religious ceremony; the bride sat there, resting one foot in a groove intended to receive it, and holding the left foot suspended. It was in this position that she received the congratulations of the members of both families.³

Sterile women also came to certain stones at Decines (Rhône), asking to be made fruitful; formerly they crouched on a monolith which stands in the middle of a field at a place called *Pierrefrite*,⁴ at Locronan (Finistère); and a few years ago they lay down on the "*Jument de Pierre*" of St Ronan, a natural rock of colossal size.⁵

During the sixteenth century a statue which bore the name of a saint (of whose name there are many variants), and to which is attached a phallic significance, was regarded as having the same fruitful properties as the stones above mentioned. This is the way a contemporary writer describes the pilgrimage of which it was the objective: "St Guerlichon, which is an abbey of the town of Bourg-dieu, near Romorantin, and in several other places, prided itself to get with child as many women who would present themselves, provided that, during the time of their novena, they did not fail to recline in devotion on the blessed statue which lies down and is not upright as are the others. Besides this, it is requisite that each day they drink a certain bever-

¹ A. Dagnet, *Au Pays Fougereais*, p. 102.

² L. Marlinet, *Le Berry Préhistorique*, p. 87.

³ Alfred de Nore, *Mythes et Coutumes*, p. 7.

⁴ E. Chantre in *l'Homme*, 1889, p. 75.

⁵ A. Le Bras, *Au Pays des Parloirs*, p. 249.

age which is mixed with the powder scraped from a certain part of it, which bears a name too indecent to mention."¹

There were also stones which, by reason of their origin, or of their shape, imparted strength or health to those placed upon them or even to those who went to visit them.

New-born children were exposed on the table of the dolmen of Trie (Oise). The name of the stone, "To the New Born," which the dolmen of Margon (Eure-et-Loir) bears, connects itself, perhaps, to a similar custom.²

At the time of the Troménie, or procession of St Ronan, fever patients, or persons subject to nervous disorders, did not fail to sit in an unevenness of the stone, which was a sort of natural chair, where the saint formerly came to meditate.³

The sick who lay down near the Hautes-Bornes, in Aisne, on the night of St John's day, awoke cured. The women pretend that by going to the stone of Clouise, in the forest of Villers-Cotterets, they cure themselves without uttering the name of the saint, whom they should invoke by cracking the fingers.⁴

PASSING THROUGH OR UNDER STONES

Several stones were regarded as having a certain influence on destiny or health because of their having in them natural or artificial holes. The ceremony consisted of introducing into the opening the head, the hand, or other members of the suppliant. In l'Aisne a number of these stones were to be seen. The head was usually placed in the hole for the purpose of questioning the future, and the young girls did so in order to see if they were destined to marry.⁵

The peasants attributed a particular value to oaths exchanged

¹ Henri Estienne, *Apologie pour Hérodote*, liv. 1, ch. 36.

² Gustave Foa in *Rev. des Trad. Pop.*, xiv, pp. 477, 478.

³ A. Le Braz, *Au Pays des Pardons*, p. 249.

⁴ Ed. Fleury, *Antiquités de l'Aisne*, 1, pp. 102, 107.

⁵ *Ibid.*, p. 107.

through the opening of the menhir of "Draché" (Indre-et-Loire), and engaged couples were not content until the promise of marriage was exchanged through the stone; indeed, even the grass growing from the foot of it insured good luck.¹ At Allaines (Eure-et-Loir), young married people must visit the pierced stone and pass their arm into its opening.

At the close of the eighteenth century, M. Coquebert, an antiquarian, visited the dolmen of Trie (Oise), the bottom stone of which he says was pierced from one side to the other by an irregular hole, through which the people of the neighborhood were accustomed from time immemorial to pass their weak and feeble children under a firm conviction that it would give them health. In addition, it has lately preserved them from fevers. The children were introduced head first into this hole from the outer side.² In Aisne, young mothers, in order to overcome bad luck, had their children passed through a stone which had a hole in it, while in Eure-et-Loir, in order to insure new-born children against witchcraft, they had them also passed through the hole in the dolmen of Allaines, which is now destroyed.³

This custom, more or less christianized, is sometimes observed in churches. One reads in the *procès verbal* of a visit to the church of St Jean de Marillais, in 1644, that the clergy stopped up a hole which was in the bottom of the altar, in order to allay the superstition practised by parents who inserted into it the heads of their children.⁴

In Allier they placed the head of a young child into the opening made in the tomb of St Menoux, and they deposited an offering therein, in order that they might not become imbecile.⁵ Not far from Courville (Eure-et-Loir), the mothers, in order that their children should walk alone, had their little feet passed into

¹ L. Bonater, *Mégalithes de la Touraine*, p. 71.

² Ch. Coquebert in *Bulletin de la Société des Sciences*, Paris, 1799-1801, II, p. 39.

³ G. Fouju in *Rev. des Trad. Pop.*, XIV, pp. 477-478.

⁴ Célestin Port in *Soc. des Antiquaires de France*, 1884, p. 76.

⁵ Bardoux in *Société d'Emulation de l'Allier*, 1867, p. 345.

the aperture of a pierced stone placed in a chapel called La Madelaine.¹ At Marcamps, in Gironde, was the hole of St Jean, made in a wall into which children were also introduced. This, however, lost its virtue after some one passed a dog through it.² Adults practised this observance less often than did the children; nor have I discovered it applied to megaliths, though it appears probable that such was the case. At Ivry the faithful passed their hands through a square hole in the back of the altar of the chapel of St Frambour, among the stones on which the saint rested when he was fatigued; after this they drank water from a neighboring cistern.³

At Marly-le-Vicomte, when a domestic animal became sick it was led to the Borne stone, which had a hole in it, and to obtain a cure it was necessary to pass through the hole a piece of money which was not picked up again.⁴

The act which consists of crawling under a stone slab, where the supports usually left but little space between it and the ground, does not connect itself, so directly as did those preceding it, with megalithic worship. Although such a practice was anciently performed, it does not appear to have taken place under the slabs covering dolmens. As these were almost invariably hidden under a tumulus, they could not, except in rare instances, serve the purpose, and even if they did, the practice was not undertaken except in relatively modern times, after their mortuary purpose was forgotten. I do not believe that any one has discovered a single example of a passage under a megalithic monument which has not been subjected to some modification.

The monk Jacques Demai, in his *Vie de Sainte Clotilde*, published in 1613, speaks of the custom the pilgrims had of passing three times under a stone table which was on the plaza of Andelys, near the fountain of that saint, and which was destroyed in

¹ Vauguion in *Mém. de la Soc. des Antiq.*, III, p. 375.

² F. Daleau, *Traditions de la Gironde*, p. 44.

³ *Mém. de la Soc. des Antiq.*, I, p. 430.

⁴ Ph. Salmon, *Dict. Archéologique de l'Yonne*, p. 86.

1799. It was possibly an ancient dolmen that had been the tomb of St Ethin in Eure. It was tool-dressed about 1895, and transformed into a table supported by four little columns under which people passed in vain to be cured of pains in the back, as was the case with the great stone of Ymare in Seine-Inférieure, which now forms a roughly squared table with a cross engraved on one of its angles. It stands but eighty centimeters from the ground, and in order to be cured of rheumatism, or even of madness, one must not, in passing under, touch it with his back, nor must the knees touch the earth.¹

At present such little monuments are almost always found in churches and are often said to enclose the body of some saint. Quite a large number have been brought to light under which the rite is yet performed, a few only of which I will note.

According to a belief prevailing in the city of Noirmoutier all persons suffering from fever who pass, by crawling, under the tomb of St Filbert are invariably cured; those who crawl through the two passages which are worn through the monument will marry within the year.² Pilgrims who drag themselves on their knees between the two supports under the tomb of St Villebrand, in the church of St Vulbas, on his feast day, are cured of stomach-ache or colic. There is preserved in the church of St Villers, St Sépulcre (Oise), a stone under which they pass sick children.³

ENCIRCLING THE STONE

The ceremony of encircling the stone, especially when it was not performed by a single individual, took the form of a dance or procession; it possessed an efficacy similar to that of the customs already described, and was performed for the same purpose.

In Auvergne, on the plateau of Puy-de-Mouton, above the anciently inhabited grottoes a statue of the virgin has replaced a

¹ Leon Couill, *Mégalithes de l'Eure*, p. 45; *Mégalithes de la Seine-Inférieure*, p. 21.

² Henri Bourgeois, *La Vendée d'Autrefois*, p. 21. A. Dauzat in *Rev. des Trad. Pop.*, xv, p. 613.

³ Gustave Fouju in *Rev. des Trad. Pop.*, xiv, p. 477.

megalithic monument called the "Pierre Fade," around which formerly on a wedding day all the invited guests promenaded while the newly married couple danced around it three times that the union might be fruitful and the woman a good nurse.¹

In about 1880, not far from Carnac, people who had been married many years and were childless came at the moment of the full moon to a menhir, took off their clothes, and the woman set herself to running around the menhir, endeavoring to escape the pursuit of her husband, which she ended, however, by allowing herself to be caught. The relatives kept watch to prevent inquisitive persons from coming and interfering with those engaged in this singular custom which, it appears, still takes place at times.²

At the end of the eighteenth century, each year on the 15th of August, before sunrise, the women of Croisic left their houses, and all of them holding each others' hands and crying out at the top of their voices, went in the direction of the Pierre Longue, around which they danced all the morning.³ At Locronan the pilgrims three times circled the rock on which is the chair of St Ronan.⁴

One Sunday in 1836 an antiquarian of Poitou observed two men and a woman who had gone to Poitiers for the fête of Ste Radegonde; they stopped at the foot of the Pierre Levée and began to march in procession and made its circuit three times. Having arrived at the place of beginning, they kissed the stone, and after making the sign of the cross, continued their route.⁵ The observer does not say what the object of this ceremony was, but from other things done elsewhere we do know why people addressed themselves to stones.

¹ Béranger-Féraud, *Superstitions et Survivances*, II, p. 189.

² Paul Sébillot, *Traditions de la Haute-Bretagne*, I, p. 50.

³ E. Richer, *Description du Croisic*, 1823, p. 82.

⁴ Abbé J. M. Abgrall, *Pierres à Bassins*.

⁵ Mangon de la Lande in *Antiquaires de l'Ouest*, 1836, p. 47.

In the Bocage Normand mothers of conscripts go to the Pierre Dyallon, place a bough on the dolmen, and go around it backwards in order that their sons may draw a good number.¹ The husbands whose wives domineer them and make them miserable (others say who fear to be betrayed) went in the night and hopped around the rock at Combourtillé (Ille-et-Vilaine).² At Villars (Eure-et-Loir) they make the horses which are attacked with colic go around a piece of ground called Perron de St Blaise.³

FRAGMENTS OF STONE

On love, generation, and happiness, fragments of certain stones had an influence analogous to that attributed to certain natural stones or to megaliths. At times they amounted to a real charm. In Picardy it was said to young girls: "*Vos vos marierez ech' l'année ci, vos avez des pierres ed' capucin dans vo poche.*" This was in allusion to the popular belief according to which every young girl who takes a little piece of a stone on which a Capuchin prisoner in the great tower of Ham left his impress, gets married before the year rolls round.⁴

In the Beaujolais, women afflicted with sterility scraped a stone placed in an isolated chapel in the middle of the prairies.⁵ At St Sernin des Bois (Saône-et-Loire), they scraped the statue of St Freluchot.⁶ In order to facilitate childbirth, those who were believers carried away fragments of a stone which formerly existed at Avensan in Gironde.⁷

To be protected from sickness, each of the pilgrims selected a

¹ V. Brunet, *Contes du Bocage Normand*, p. 133.

² A. Oudin, *Le Folk-Lore de l'Ille-et-Vilaine*, 1, p. 105.

³ A. S. Moirin, *Le Prêtre et le Sorcier*, p. 280.

⁴ Leroux de Lincy, *Le Livre des Proverbes Français*. L. Dusevel, *Lettres sur le Département de la Somme*, p. 174.

⁵ Claudius Savoye, *Le Beaujolais Préhistorique*, p. 103.

⁶ L. Lex, *Le Culte des Eaux en Saône-et-Loire*, p. 40.

⁷ F. Dulaeu, *Traditions de la Gironde*, p. 43.

piece of gravel of Arrayé, which is to be seen on the road to St Sauveur in the Hautes-Pyrénées.¹

Particles of stone play a considerable rôle in the medicine of superstition. Its use is ancient, and if most often the dust of the stones, mixed with the drink of sick persons, came from the tombs or from the statues of saints, there were some that were taken from megaliths.

Persons attacked with fever scrape an enormous rough stone, at the edge of Lussac-les-Châteaux and of Persac (Vienne), called (no one knows why) by the name of St Sirot; or they scraped the large Pierre de Chenet in the same quarter on which they place, as offerings, pins and farthings. The dust is mixed with water which they drink nine mornings in succession.² In La Bresse, young mothers, in order to stop the crying of their nursing children, make them take fragments of a stone placed in the midst of the vines at a place called St Clément (perhaps for St Calmant) in the parish of Vounas, in Ain.³ At St Cénéry sur Cère they scrape a menhir to cure colic in children.⁴

The custom of breaking fragments from tombs or statues extends to a very ancient period; following an ancient custom of which Gregory of Tours speaks (in the sixth century), the people scraped stone from the tomb of St Marcel at Paris, and its dust, mixed in a glass of water, passed as a specific for several diseases.⁵

In the seventeenth century, pilgrims attacked with fever or toothache scraped or ate the stone of the tomb of St Thomas at Poitiers, and women gave it to their children also to cure them of toothache.⁶ Numberless examples have in our time been brought to light concerning the efficacy of fragments of stones

¹ Achille Jubinal, *Les Hautes-Pyrénées*, p. 254.

² Beauchet-Filleau, *Pèlerinages du Diocèse de Poitiers*, p. 526. Léon Pinson, *Le Folk-Lore du Poitou*, p. 510.

³ Fr. Renard, *Superstitions Breissanes*, p. 22.

⁴ Béranger-Féraud, *Superstitions et Survivances*, III, p. 524.

⁵ Dulaure, *Histoire de Paris*, I, p. 73.

⁶ Beauchet-Filleau, *Pèlerinages du Diocèse de Poitiers*, p. 519.

over tombs. The peasants make holes, in the shape of drinking-cups, in the limestone of the tomb of the very blessed Barthélemy Picqueray, placed in a little chapel near Cherbourg; they fill them with water and dilute it with the scrapings of the stone and give it to their children to drink.¹ To cure themselves of fever, the people of Déols (Indre) drink the marble dust from a tomb in a crypt of the church. At Cernay (Vienne) the particles produced by scraping the tomb of St Serein were mixed with water from the fountain of the same name; those of the mortuary stone of the Holy Virgin were put in the drink given to fever patients.

Sometimes the people, of their own volition, transformed the effigies from the graves of the nobility and gentry into the statues of saints. That of a chevalier which was in the church of Vigeau (Vienne) had received the name of St Eutrope; the relatives of the sick people had scraped with a knife that part which corresponded to the seat of pain of the sick person, who was made to take it in an infusion. If the matter concerned children, the dust was put into their stockings or their shoes.²

At the abbey of Grainetière (Vendée), a stone statue on the tomb of a lord of Parthenay, whose life had been far from edifying, was venerated as that of a saint and they called it St Rognoux. They scraped the nose of this statue and made the children who were troubled with scurf swallow the dust in order to effect a cure. After the destruction of the abbey the head of this statue was placed at the foot of the cross in a niche which was enclosed by an iron grating. This obstruction was soon broken down by the devotees, and for want of a nose, which had completely disappeared, they now scrape other parts of the body.³ Sometimes this practice was associated with the worship of healing waters which ran in the neighborhood. At St Sernin des Bois the pilgrims scraped the statue of St Plotat and made such chil-

¹ Spalikowski, *Payages et Paysans Normands*, p. 41.

² Beauchet-Filloau, loc. cit., pp. 322, 323-326.

³ A. de la Villegille in *Bull. de la Soc. des Antiquaires de l'Ouest*, 1842.

dren as suffered from general debility drink the dust diluted in water taken from a neighboring spring.¹ Fragments from the stone of the altar of the chapel of St Benoît, at Maillé (Vienne), were diluted in the water of the spring. People suffering from fever who go to drink the water of the pool of Paizay-le-Sac, not far from a chapel dedicated to Ste Marie the Egyptian, mix with it a little powder scraped from the stone of the ancient sanctuary.²

In order to slightly christianize the practice, it appears that certain stones from which individuals came to demand cures had been carried into churches. Several ancient chapels of Beaujolais did, or do yet, enclose miraculous stones the surfaces of which are scraped by the aid of a knife; the powder thus obtained is swallowed and the patients are thereby cured of various diseases. That which was in the chapel of St Ennemond, and which was efficacious against the toothache and colic, has been taken into the neighboring court-yard; yet it is still honored by numerous pilgrims retaining faith in its virtue, who, after kneeling at the foot of the altar, do not forget the miraculous powder, the real object of their pilgrimage.³

MARVELOUS IMPRESSIONS IN STONES

Marvelous impressions are the object of a worship similar to that of great natural stones and megaliths, and is probably as ancient, since it is found established in numbers of places almost in the beginnings of history. In France, if they are found far back in antiquity, they are posterior to the establishment of Christianity, but the impressions attributed to heroes or to gods were visited doubtless by the faithful who came to ask of them for either health or happiness. It is very likely that the apostles were not able to destroy the secular observances all at once, and in consequence they adopted in regard to them the same methods

¹ L. LEX, *Le Culte des Eaux en Saône-et-Loire*, p. 40.

² Beauchet-Fillasse, loc. cit., pp. 225-226.

³ Claudius Savoye, *Le Beaujolais Préhistorique*, pp. 100-101.

as they did for the springs, and replaced the name of a pagan deity with that of a popular saint who was renowned for his miracles. This is the reason that there are found in Burgundy, and in near-by regions, so many "Steps of St Martin" or of his favorite steed. According to a local historian,¹ they stake out, so to say, the evangelical journeys. Besides, the church followed the same policy, and the names of illustrious saints of local celebrity replaced those of local divinities without entirely effacing them. Visits continued under the name of pilgrimages and with modifications of the customs more apparent than real.

Gregory of Tours cites several of these impressions signalized by public veneration, and among them those of a stone in the Basilica of Tours on which the saint had sat.² At Poitiers they had erected the church of "Pas Dieu" at the place where his foot had rested, marked after his appearance to Ste Radegonde.³ One of the most ancient pilgrimages of this region took place at "Pas de St Martin" at St Martin la Rivière.⁴ *La Peyra del Pèchat del Boun Diou* ("The Stone of the Sin of the Good Lord"), at Louignac, in Limousin, which has an impression the shape of a foot, is the object of an immemorial worship.⁵ One could multiply these examples, but I will speak here especially only of the observances which, either with or without Christian veneer, connect themselves with a worship of probable pagan origin.

It is very likely that there has been conducted near these impressions practices related to love and fruitfulness, and, as has been already seen, that several of these stones upon which *la glissade*, or rubbing, was practised had cups or basins cut into them,—circumstances which had contributed to cause them to be chosen for these rites. Up to the present time there have been brought to light but a small number of observances in connection

¹ A. Balliot et Thiollier, *La Mission de St Martin*, p. 10 et passim.

² *De Gloria Confessorum*, ch. vi, cited by Balliot.

³ Alfred Maury, *Légendes Populaires du Moyen Âge*, p. 215.

⁴ Beauchet-Filleau, loc. cit.

⁵ J. B. Champeval, *Proverbes Bas-Limousins*, p. 35.

with this class of ideas; it appears, however, that one can connect them with a sort of ordeal which was practised at Neuilly St Front, near the Château Thierry, where the married couple went to the place called the "Desert," where there was an immense sandstone rock, on the surface of which were to be seen two large and deep natural furrows. There they poured out wine which the newly married couple must drink, one at the end of each furrow, and from the manner in which they drank different prognostications were drawn.¹

A frequent custom in the worship of stones is that in which the believer places his body in contact with that to which he attributes power. This is also done when visits are made to the reputed miraculous impressions.

At Spa (Belgium), women who wish to conceive put their foot in a groove in a stone called the "Pas de St Remacle."² They place the feet of children who are slow in learning to walk in three impressions left by the footprint of the Virgin at Ménéac in French Morbihan.³ At Brignoux (Vienne), the mothers carry them to the depressions in a large rock left by the slipper of St Martin. The custom is that after praying at the foot of the cross which surmounts it, there are deposited in the impression some pieces of money destined for the poor of the neighborhood who, in exchange, should say a prayer for the benefit of the donor.⁴

The pilgrims press their foot on the footprint of the Virgin which is at a short distance from the chapel of St Laurent in Deux-Sèvres.⁵

In Beaujolais, they carry children who are slow to walk to a groove in a rock called "Pierre de Clevis." In St Romain de Popey they urinate in the cavity and we are assured the cure quickly follows.⁶

¹ Ed. Fleury, *Antiquités de l'Aisne*, I, p. 106.

² Pommerol in *l'Homme*, 1887, p. 629.

³ Mahé, *Antiquités du Morbihan*, p. 442.

⁴ Beauchet-Filleau, *loc. cit.*, p. 521.

⁵ Pommerol, *loc. cit.*

⁶ Claudius Savoye, *Le Beaujolais Préhistorique*, pp. 109-110.

New-born children who have a certain blue vein visible under the eyebrows, which they call "mal de St Divy," are taken to Dirinon to the stone where Ste Nonne, mother of St Divy, left the impression of her knees, in order that the saint may preserve them from the premature death which the sign portends.¹

At Besné (Loire-Inférieure), the bed of St Secondel—a granite fissure which served as a bed for this blessed hermit—is used for rubbing the pilgrims who lie down there.² Peasants lie down and invoke St Étienne in one of the basin stones which are seen at Plumergat, in the Morbihan.³ Mothers cradle their sick infants in the hollow of the horse of St Martin, at Vertolay, in the Puy-de-Dôme⁴; at Pluzunet (Côtes-du-Nord) they roll feeble children in the bed of St Idunet, which is a depression in a natural block that answered as a couch for the saint. In addition, they whip them with a broom which they afterward use in sweeping the stone.⁵

Every year on August 6th, from time immemorial the lame, the paralytic, the sick of every kind, come to the chapel consecrated to St Estapin on the top of a mountain at a short distance from Dourgues (Aude). They make the tour nine times and then go to the platform on which rocks full of holes slightly project from the earth. Then each one finds a remedy for his misery. All that is necessary is for him to insert the afflicted part into the hole in the stone to which it corresponds. The holes are of different caliber, corresponding to the head, the thighs, the arms, etc. This ceremony once performed, all attending are cured.⁶ In Basse-Bretagne the same custom is observed; when one has an injured member, he goes and places it in the hole that is on the surface of a large block of naturally rounded stone

¹ A. Joanne, *Bretagne*, p. 290.

² Richer, *Voyage de Nantes à Guérande*, p. 16.

³ Rosensweig, *Reptaire Archéologique du Morbihan*, p. 9.

⁴ Pommerol, *loc. cit.*, p. 629.

⁵ Ernoul de la Chenellère, *Inventaire des Mégalithes des Côtes-du-Nord*, p. 34.

⁶ *Société des Antiquaires*, t. p. 429.

which was formerly in a field near the village of Kerangolet, in Gouesnou, and which is today in a little chapel near the country town.¹

The believers who make pilgrimages to the rock where Ste Procule left the impressions of her head, body, and arms, do not fail to apply to them their own limbs.²

The efficacy of visits to impressions, like those made in stones and fountains, depended also on the time of the day or night when they were made, which is an indication of the antiquity of the practice.

In Haute-Loire, about 1807, numbers of pilgrims visited a certain rock in which there were holes, and which bore the name "Pierre-de-St-Martin." The worship, which the clergy had vainly sought to destroy, had no satisfactory result unless performed before the rising or after the setting of the sun.³

WATER FROM MARVELOUS DEPRESSIONS

Water remaining in basins or depressions were also effective in the case of illness, as was that of miraculous fountains. Several of these little fountains were said to be inexhaustible.

Water in the depressions of the worn side of the "Pierre St Benoît," or of the "Pierre qui Pleure," at St James (Manche), always returns again into the cavities, no matter what is done to keep it out! If one succeeds in drying it up in the evening, it appears again the next morning.⁴ In Mayenne they assert that it is impossible to staunch that which refills the channels of the worn side of the Bertellière.⁵

I have been unable to discover any documents prior to the fifteenth century which mention a belief in the curative efficacy

¹ Paul du Châtellier, *Mégalithes du Finistère*, p. 25.

² Bardoux in *Soc. d'Émulation de l'Allier*, 1867, p. 348.

³ Aymard, *Le Géant du Rocher Cornouille*, p. 46.

⁴ Gustave Vouja in *Rev. des Trad. Pop.*, 19, p. 156.

⁵ Moreau, *Notes sur la Préhistoire de la Mayenne*, p. 10.

of these waters, but the custom is probably extremely old, and the passage which follows the *Evangelies des Quenouilles* evidences a custom which has long had but a traditional existence. Should a woman twist her foot, it becomes necessary for her husband to make a pilgrimage to Monseigneur St Martin for her health, and that he bring back the washings of the feet of St Martin's horse and with it wash her foot and it will in a short time get well.¹ This sovereign water for strains was probably taken from the small cistern of the worn part of the "Polissoir St Martin" at Assewilliers, in La Somme, which is not far from Artois or from Flanders, where it is believed that this little book was composed.

The water of several small cisterns in Eure-et-Loir is used for the treatment of fevers. They came to drink the water which remained in the hollows of the *polissoir*, called the "Pierre de St Martin," at Nettonville and of that called the "Puits de St Martin" at Civrav: they prayed on this stone and placed on it an offering. Women called "travelers" came from afar fifty years ago to seek health for the sick who could not come themselves.²

In La Creuse those suffering from fevers drank the water contained in three basins of the block *Lo Peiro de nau Ebalai*, at Soubrebost, so called because it has quite coarsely cut in its sides, nine large steps by means of which one gets on top of it. In addition, one should throw from there, unseen, a piece of money or a pin. So Cancalon³ relates that to them was attributed the power of healing eruptive diseases of the head; for this purpose they placed the upper part of the child's body in the little basin and washed it with the water contained in the larger one.⁴ At St Symphorien, near Uchon, persons formerly came to be cured of scurf, who washed the head in the large basin seen there, which

¹ *Evangelies des Quenouilles*, vi, p. 8.

² Gustave Fouju in *Rev. des Trad. Pop.*, iv, pp. 214-215.

³ *Essai sur les Monuments Druidiques de la Creuse* (1843), p. 14.

⁴ M. de Cessac, *Mégalithes de la Creuse*, p. 36.

contains water throughout the whole season.¹ The rain-water which accumulated in a basin stone worn into the shape of an angel and dedicated to St Mene, not far from the little town of Grandrieu (Creuse), like that of St Andéol, had the reputation of curing cutaneous eruptions; formerly the lotion was followed by offerings of money. As the water is quite dirty, because there are left there the head-dresses and caps of contaminated children, this basin was the object of an ironical verse:

Din lou bassin de Sain Mén
Aquel qu'a pas la rougno, l'y prén.²

People afflicted with skin diseases came to bathe in a cradle-shaped rock of a small stream in the neighborhood of St Arnoux.³ The water in the grooves of the "Pierre qui Pleure," at St James (Manche), cures fevers, several sicknesses of infancy, and trouble with the eyes.⁴ The water of a basin hollowed in a block of granite near the village of Termes, in La Creuse, also cured sore eyes, as did that which oozes into a little natural cup in the gorge of Tarn, near the hermitage of St Hilaire. After washing, they generally threw into it a pin stuck into a piece of the clothes of the sick person.⁵

The largest of the twenty-five hollows of a rock at Plouescat (Finistère), not far from the guard-house of St Eden, always holds water which passes for being miraculous against pains and sickness in domestic animals, and the pilgrims did not fail to carry some of it home with them.⁶ Horses attacked with colic are cured with the water in the cup of the "Polissoir of St Martin" at Assewilliers (Somme), where this blessed one watered his horse.

¹ A. Balliot et Thiollier, *La Mission de St Martin*, p. 316.

² L. de Malafosse in *Antiquaires de l'Ouest*, vii, p. 75. Jules Barbot in *Rev. des Trad. Pop.*, xvi, p. 71.

³ Béranger-Féraud, *Réminiscences de la Provence*, p. 301.

⁴ Léon Couët, *Mégalithes de la Manche*.

⁵ Jules Barbot, loc. cit. L. de Malafosse, loc. cit.

⁶ Paul du Châtellier, *Mégalithes du Finistère*, p. 77.

The sick animal should drink from this basin and then turn several times around the stone.¹

At the time of persistent drought, they went to basin rocks, the cavities of which were ordinarily filled with water the year round, and there they performed acts similar to those employed in the case of real fountains. The neighboring people to the "Pierre Pourtue" or pierced stone at Laizy, which bears the impress of the horse of St Julien, poured out holy water which they stirred with a stick or branch of boxwood, saying prayers at the same time.² At the "Baume d'Ordenche" the peasants go in a procession to a basin worn in the basalt, which they call "Fenêtre ou Tronc de St Laurent," to pray for rain necessary for their crops.³

OFFERINGS

Those who come to ask of the stones happiness or health, often deposit, after the accomplishment of the principal ceremony, offerings intended for the genii whom they desire to petition. Several of these presents were made to megaliths and bore relation to love. At Montault, at Mellé (Ille-et-Vilaine), subsequent to *la glissade*, the young girls had to place on the stone a little piece of cloth or ribbon.⁴ Those also who climbed on to the erect stone of Colombières, in order to be married during the year, left there a piece of money.⁵

In the beginning of the last century young girls wishing to procure husbands for themselves placed in the fissures of the menhirs of Long-Boël (Seine-Inférieure) flakes of wool and amulets; this custom was verified near Guérande, in 1820, by M. Montbret, who found in the clefts of the dolmen pieces of rose-colored woollen goods tied with tinsel, and they told him that these offer-

¹ C. Boulanger, *Le Ménhir de Doligt*, Somme, 1898.

² A. Bulliot et Thiolliez, *La Mission de St Martin*, p. 288.

³ Pommerol, *Pierres à Bassins*, p. 629.

⁴ P. Bézier, *Mégalithes de l'Ille-et-Vilaine*, p. 101.

⁵ A. de Caumont, *Antiquités Monumentales*, 1, p. 120.

ings were made in safe hiding-places by young girls who hoped to be married during the year.¹

There are still discovered in almost every hole or fissure of the menhir of "Pierre Verte," in the valley of Lunain (Seine-et-Marne), either a nail or a pin, which are from the young people of the country who come to throw them in, in the hope of soon being married.² From time to time there are found on the "Pierre St Martin" (Indre-et-Loire) sou pieces, fruit, bread, and cheese, which are offered there by those who attribute to the stone marvelous properties.³

Children carry to the Mère aux Cailles (Eure-et-Loir) slices of bread and butter, confitures, etc., which they place in a hole that is quite deeply worn in the side of the menhir.⁴ This is perhaps in remembrance of an observance on the island of Yeu, where the children, not very long ago, collected haphazard, on the road, two little stones and placed them on a small monolith situated between the town and the harbor, saying, "Grandmother, here is bread and lard."⁵ The mothers of the conscripts place on the "Pierre Dyallan," before invoking it, the branch of a tree.⁶ Formerly it was the custom to go in the spring and deposit a handful of trefoil on the dolmen called "Palet-de-Gargantua," at St Benoit-sur-Mer (Vendée), in order to be preserved from the horse Malet, which threw over a precipice those who mounted him.⁷

The presents made to basin stones and to those bearing marvelous impressions almost invariably had for their object the procurement of health. Those who came to the "Pierre-de-Terme" to be cured of trouble with their eyes, left a pin in the

¹ A. de Caumont, loc. cit.

² Th. Volkov in *Rev. des Trad. Pop.*, VIII, p. 448.

³ L. Bousrez, *Mégalithes de la Touraine*, p. 6.

⁴ G. Fouju, in *Rev. des Trad. Pop.*, X, p. 673.

⁵ Richard, *Guide d'Île d'Yeu*, p. 40.

⁶ Victor Brunet, *Contes du Bocage Normand*, p. 137.

⁷ Abbé F. Bandry, *3^{ème} Mémoire*, p. 14.

basin.¹ Pilgrims coming to the Baume d'Ordenche, to pray either for health or for rain, deposited sous in the cavity called the "Hole of St Laurent."² Those who, for the cure of certain sickness, went to the "Pierre de St Mén," near Grandrieu (Lozère), placed some money in the basin³; those suffering from fever deposited in that of the "Pas de St Martin," in Iffendic (Ille-et-Vilaine), pieces of money and little wooden crosses.⁴ The mothers of children not yet able to walk alone, placed in the impression of the "Mule de St Martin," at Brignoux, some small change intended for the poor of the place, who, in taking it, were to say a prayer in the donor's favor.⁵ Those passing by placed there as offerings a sou, or flowers, or fruits, through a grating which protected it at a "Pas de St Martin," and at a "Chaire de St Martin" in the difficult passage of "Vaux Chinon."⁶ Formerly pious souls not content to pray near the overturned dolmen of the "Pierres d'Amuré" (Deux-Sèvres), offered to it little pieces of money.⁷

Sometimes the objects deposited on the megaliths did not consist merely of an offering to the monument, but were connected rather with the widespread belief by which one can compel his sickness to pass into an inanimate object and rid himself of it by transmitting it to the one who picks it up. On the island of Sein, those suffering from fever have nine pebbles, which are carried in the sick person's handkerchief, placed for them at the foot of menhirs; the one taking these pebbles takes the fever.⁸

RESPECT PAID TO MEGALITHS

All who have concerned themselves with the opinions which the megaliths inspired to the people living near them, have con-

¹ L. de Malafosse in *Antiq. de l'Ouest*, VII, p. 75.

² Pommerol, *Les Pierres à Bassins*, p. 529.

³ Jules Barbot in *Rev. des Trad. Pop.*, XVI, p. 73.

⁴ P. Béziers, *Mégalithes de l'Ille-et-Vilaine*, p. 222.

⁵ Beauchet-Filleau, loc. cit., p. 521.

⁶ A. Balliot et Thiollier, *La Mission de St Martin*, pp. 186, 305.

⁷ *Monuments du Pottou*, p. 10.

⁸ Joanne, *Bretagne*, 569.

curred that they have been the objects of a certain regard mixed with fear, which is probably an unconscious survival of the far-distant epoch when they played a rôle in the social or religious life with which we are but slightly acquainted, but which must have been notable. One rarely hears of irreverent acts being committed near them, or, at all events, that such should be the case among natives of their locality, but, on the contrary, one does at times encounter vestiges of the ancient veneration which is not without value in showing practices when the ancient religion and that now prevailing find each other, so to say, associated. In Aveyron the old people respectfully uncovered when they passed near the dolmen of Claparèdes called "l'Oustal de los Fodello-rellos,"¹ but they also made the sign of the cross. To turn away witchcraft they did not fail to make the sign of the cross before the menhir of the "Femme Blanche" in the forest of Marçon.²

When the children were near a *polissoir* of Nettonville (Eure-et-Loir), called the "Bénitier du Diable" because they say the cup was hollowed out for him, they dipped up a little of the water which remained there and made the sign of the cross.³

At times even the ceremonies in which the priests took part were held near these vestiges of another religion. Before 1789 the clergy went in procession to the dolmen of Ste Madeleine (Charente), and about the same period they said mass in a boat above Druidical stones which were visible fifteen feet under water between Le Guilvinec and Penmarch.⁴

A stone of the Bois de Bersillat, at Mingot, in Côte d'Or, bearing the impression of the four feet of a horse, was visited with devotion, as it was said to be the prints of the animal ridden by St Martin.⁵ Formerly they kissed respectfully the footprints of the Virgin and the infant Jesus, near Moncontour de Bretagne; and

¹ Michel Virenque in *Mém. de la Société des Lettres de l'Aveyron*, 1868-73, p. 34.

² Ph. Salmon, *Dict. archéologique de l'Yonne*, p. 53.

³ G. Fouja in *Rev. des Trad. Pop.*, v, p. 135.

⁴ *Société des Antiquaires de France*, vii, p. 43. Cambry, *Voyage dans le Finistère*, p. 350.

⁵ A. Balliot et Thiollier, *Mission de St Martin*, p. 298.

at the other extremity of France they kissed the footprint of the mare of Roland on the sacred rock of Ultréra.¹

In Hautes-Pyrénées the guides and others who passed by, embraced the Caillou de Arrayé (the drawn-out pebble) in making the sign of the cross. This rock dominates an enormous landslip on the road to St Sauveur on which the Holy Virgin is said to have rested when she visited the country.²

It is very likely that the respect paid to stones remarkable for their size or other particular circumstance, was due to judicial acts of which tradition has retained a remembrance, because they were carried out near them. At St Gilles Pligeaux (Côtes-du-Nord), in the center of the Roche à Sec (*Roc'h ar Lix*, the "Roche de la Loi"), broken in 1810, there was a hole which was intended to receive the post which supported the movable dome under which were sheltered the judges who came there to dispense justice.³ The "Selle à Dieu," at the edge of Arinthod, which was destroyed in 1838, was an isolated rough stone, standing in a lonely place, like a glass with a foot to it, it being more contracted in the middle of its height than at its extremities. It was provided with a place of natural form to sit upon, and according to local tradition the judge of the county formerly went there to hear the people's causes.⁴ In Aisne they refer to several natural stones near which justice was rendered in the Middle Ages, and, indeed, at a period quite near our own. The best known was a large rock still to be seen at Dhuizel, in the parish of Braine; in the middle of the eighteenth century the menhir of Chavigny, canton of Soissons, and the "Pierre Noble" at Vauregis; in the sixteenth and seventeenth centuries and even in the eighteenth is seen mention of the acts performed near the "Grès qui va boire."⁵

¹ J. M. Carlo in *Rev. des Trad. Pop.*, VII, p. 427. Jaubert de Réart, *Souvenir Pyrénéen*, p. 183.

² Achille Jubinal, *Les Hautes-Pyrénées*, p. 134.

³ B. Jollivet, *Les Côtes-du-Nord*, III, p. 310.

⁴ D. Monnier et A. Vingtrinier, *Traditions Populaires Comparées*, p. 427.

⁵ E. Fleury, *Antiquités de l'Aisne*, I, p. 105.

We are assured that the seigneurs formerly judged their vassals near the "Pierres de la Justice" of the plain of Champ Arnauld in the Deux-Sèvres,¹ following the tradition of the three menhirs of Simandre, near Lyon, which are placed in a triangle and which have served as gallows to the Baron de Pierres.²

In Haute-Loire it is said that the seigneurs collected the tithes near a large stone called La Carte.³ The Chartreux of Gaillon (Eure) came to receive their rents near a defaced table which was placed horizontally on two vertical stones, and it is upon this that, since time immemorial, the new Brothers of Charity of Aubevoie made their vows.⁴ Formerly persons came here to render their vows of homage and faith to the chapter of the cathedral of Chartres in the place called "Pierre de Main Verte" where there are to be seen four or five large stones in the middle of a field.⁵

In presenting the numerous facts which demonstrate the very apparent survival of the worship of stones in the most anciently civilized country of the Old World, I have systematically abstained from all comparisons with what has been shown to exist in other countries of Europe. Had I done so, I would have been necessarily very incomplete, for I do not think that an inventory, like that which I have the honor here to present, has been made in countries where megalithic monuments are still found in great numbers.

I shall be very happy if this study gives to American students an incentive to seek the survival of stone worship among the aborigines of the New World. Their comparison with those of France would without doubt give many curious and interesting results.

¹ Desalvres, *Le Mythe de la Mère Lucine*, p. 96.

² Tardy, *Le Menhir de Simandre*.

³ Aymard, *Le Géant du Rocher Cornille*, p. 56.

⁴ L. Couët, *Mégalithes de l'Eure*, p. 63.

⁵ Lejeune in *Soc. des Antiquaires*, 1, p. 5.

FLINT IMPLEMENTS AND FOSSIL REMAINS FROM A SULPHUR SPRING AT AFTON, INDIAN TERRITORY

By W. H. HOLMES

INTRODUCTION

During the summer of 1901 the attention of the Smithsonian Institution was called to a new site yielding fossil remains of the mastodon and mammoth, and numerous flint implements in close association with them. The information was furnished by Dr R. H. Harper, of Afton, Indian Territory, who, on making a superficial examination of the site, became convinced that the phenomena were of much scientific interest. Through his solicitation the National Museum took the matter up, and Mr F. A. Lucas, of the division of osteology, sent his assistant, Mr A. Stewart, to make investigations, the particular object being to procure a complete skeleton of mammoth or mastodon for the Buffalo Exposition: but Mr Stewart found that the remains of fossil animals at Afton were dissociated and fragmentary, and the investigation was abandoned after slight excavations had been made.

Owing to the report that relics of human handiwork were found associated with the fossil remains, I resolved to visit Afton and make investigations. Setting out for the west on September 26, I stopped over a couple of days at Saint Louis to visit the fossil mastodon beds at Kimmswick, twenty-five miles south of the city and, in company with Mr C. W. Beehler and Mr T. D. Townsend, who are interested in the property and engaged in its exploration, spent a most instructive day at the site. The question of the association of human remains with those of the mammoth and mastodon has also been raised at this place, but up to

the present time the evidence collected is not sufficiently strong to be at all conclusive. It is believed that the bones found which so closely resemble the humerus of man may be portions of the fibulae of young mastodons, and that the flint implements, which are plentiful on the surface of the site, may have been only recently associated with the fossil remains. At any rate, it seems wise to suspend judgment in the case until more critical and exhaustive studies have been made. Resolving to return at an early date and make fuller examinations, I hastened on to Indian Territory.

THE SPRING AT AFTON

The village of Afton, Indian Territory, a station on the Saint Louis and San Francisco Railway, is situated in the midst of a plain which occupies the angle between Arkansas river and its northern tributary, Neosho or Grand river. The former stream enters the Territory from Kansas on the north, flowing south-eastward and passing into Arkansas at Fort Smith, while the Grand rises in southeastern Kansas and southwestern Missouri and flows southward across the plains, joining the Arkansas in Cherokee reservation, forty-five miles south of Afton. Forests grow along the more rugged bluffs and on the occasional low hills, but the general region is almost treeless. The country is now very well settled, and farming and grazing are carried on with success.

The geologic formations underlying the immediate region of Afton appear to be of Silurian age, the strata being approximately horizontal, but they are much obscured by superficial deposits save in the banks of the rivers and their larger tributaries.

The springs, with which the fossil remains and artifacts are associated, are situated in a shallow wash at the very head of one of the lateral branches of Horse creek, a tributary of the Neosho, falling into it from the north. The wash has no water, and probably never carried a stream save in times of heavy rainfall or as a result of the melting of snow in the spring. In summer the

water from the springs sinks from sight a few hundred yards from the source. The wash, which ramifies in various directions, is in places two hundred feet wide, and has a level floor only slightly depressed beneath the surface of the surrounding prairie. In this flat space the sulphur springs rise, and the water, spreading out, forms a marshy area an acre or more in extent, which is much trampled by cattle when they have access to it, as it doubtless was at an earlier date by herds of buffalo and possibly by greater mammals that went before them. The surface is soft and spongy, sinking beneath the feet; and, in approaching the spring basin, it was necessary to lay down boards to insure a footing.

The basin of the principal one of the three springs forming the group was boxed in with rough boards, a second and very weak spring occurring some forty feet to the west, and a third, a little stronger, in a side wash perhaps a hundred and fifty yards to the northeast. The water rises in the principal spring so rapidly that it requires quite steady dipping on the part of a single workman to keep the flow down. It is quite clear and so slightly impregnated with sulphur that it is used by the people of the vicinity for drinking purposes. The flow is steady, not changing winter or summer, a fact which indicates the great depth of the source — probably in the reservoirs from which the artesian water of the general region is obtained.

TRADITIONS REGARDING THE SPRING

In the neighborhood the spring has the reputation of possessing unusual medicinal qualities, and it is said that the aborigines of the region were formerly in the habit of gathering from all directions and camping near it for the purpose of drinking the water. This tradition refers, apparently, to the Cherokee; but since these people are recent arrivals in the west and appear to have no definite knowledge of the matter, I was inclined to believe that the tradition related to the tribes who preceded them

in the region, and that the qualities of the spring were not medicinal, as we understand the term, but magical attributes such as are commonly associated with sources of water supply by primitive peoples. This point will receive attention later. Careful search in the vicinity of the springs failed to bring to light even the most meager traces of aboriginal occupancy.

FIRST CLEARING OUT OF THE SPRING

At an early date a barrel was set into the soft ground to receive and retain the water, and about fourteen years ago this was superseded by a strong box, but as the boards were sharpened and driven down the deposit of flints in the spring was not seriously disturbed. Later a new box was set inside of the old one, and in cleaning out the reservoir many implements and bones were found. It is stated that at that time a bushel or more of the flints were thrown out and distributed among various persons.² It is much to be regretted that none of these have been preserved. Subsequent cleanings out yielded additional implements, and in the summer of 1901, Dr Harper obtained about one hundred and fifty specimens and some fossil teeth, and these have been presented to the Smithsonian Institution. In June, 1901, Mr Stewart visited the place and made the slight excavations already referred to, but did not penetrate deep enough to discover the deposit of implements.

FINAL EXAMINATIONS³

Having procured workmen and supplied myself with all necessary tools and appliances, I built a long trough to carry the water well away from the spring and at once began the work of bailing out the basin. The box was about four feet square and made of

² It should be noted that the stories relating to this period of the history of the spring vary considerably.

³ My thanks are due to Dr Dawson, owner of the property, for the privilege of making excavations. I must add also that most valuable aid was given in the work of excavation by Mr DeLancey Gill, of the Bureau of American Ethnology, who accompanied me on the trip.

heavy boards held in place by timbers on the inside. About four feet from the surface of the ground silt was encountered, then sand and fine gravel, and with these latter came up teeth of small mammals and an occasional mammoth tooth, also some flint implements, the number increasing as descent was made. When comparatively firm gravels were reached, at five or five and one-half feet, the teeth and flints were found in great abundance, and the shovel, which was now brought into use, when inserted beneath the lower ends of the boards at the northern side, came out half filled with the handsome blue and white spearpoints and knives, and along with these were bones of horses, deer, buffalo, and wolves. A little further excavation beneath the northern margin of the box brought to light the head of a buffalo, and antlers and bones of two or more deer. With the deposit were also a number of implements made of deer antler which resemble very closely the hammers and pressure-flaking implements used by the tribes of the region in shaping flint.

The spring box, now being without sufficient support on the inside, collapsed, letting in the beds of soft muck and sand. It thus became necessary to make excavations outside of the spring basin sufficiently extensive to enable the workmen to clear away the wrecked box and prevent further caving in. Removing the superficial muck, which was about two feet in thickness, from a considerable area, it was found that it rested on the surface of a bed of compact and extremely fine sand, which was quite firm save about the spring box where it had been disturbed by the original cleaning out of the spring and by the slight excavations of Mr Stewart. In the muck nothing excepting a few fragments of bones of buffalo were encountered, and there were only occasional specimens in the sand. The discovery of a large spearpoint in the sand at a depth of three feet from the surface of the ground was a surprise. This was, perhaps, three or four feet horizontally from the northern side of the box as it originally stood. Since this locality had been undoubtedly a resort of the

buffalo for a long period, instances must now and then have occurred of the death of wounded animals whose bodies contained the missiles shot into them, and in this way it is easy to account for the finding of stray spearpoints, and these naturally would occur at depths in the formations as great as were reached by the bones of the animals themselves.

Half a day was consumed in getting rid of the wrecked box and clearing out the muck and water. A pump was used to remove the water, and this work was kept up all night to prevent flooding; but on the second night the pump failed and the whole place was soon under water, causing much delay. Reaching finally the level of the flint deposit in the spring, we began to encounter the implements and took out a hundred or more, besides additional bones of the buffalo, elk, deer, and wolf. The finding of the flints was under such conditions of water encroachment and deep shadow that it was not possible to obtain photographs; but this seemed of little consequence, as the specimens did not occur in any particular order. They were piled together as if deposited, mainly at least, at one time, in the mouth of the spring. The main body of them had descended to a depth of from four to seven feet, and with the exception of a few stray pieces, such as those already referred to, they were included in a space not more than three feet in diameter. In this cluster also were most of the modern bones as well as many of the ancient remains. At seven feet in depth there were no more flints, but occasional teeth of the horse occurred along with the great teeth of the mammoth. Work was continued long enough to make sure that there were no more flints, and some time was spent in adding to the collection of fossil teeth. Before the filling of the excavation, a new box, four feet square and seven feet deep, was set in the spring, and we had the pleasure of seeing the bubbling water rise in it as the work went on.

THE FORMATIONS

Other excavations were made at various points with the view of determining the nature and extent of the formations. After our departure from Afton, Dr Harper, working under my instructions, sunk three pits—one north of the spring, twenty feet long and thirteen feet deep, which practically connected with the original excavation; a second, eleven feet deep, twenty-five feet west of the spring; and a third, nine feet deep, south of the spring twenty-five feet away.

The section (fig. 5) shows the geological formations, together with the position and relations of the various finds of bones and

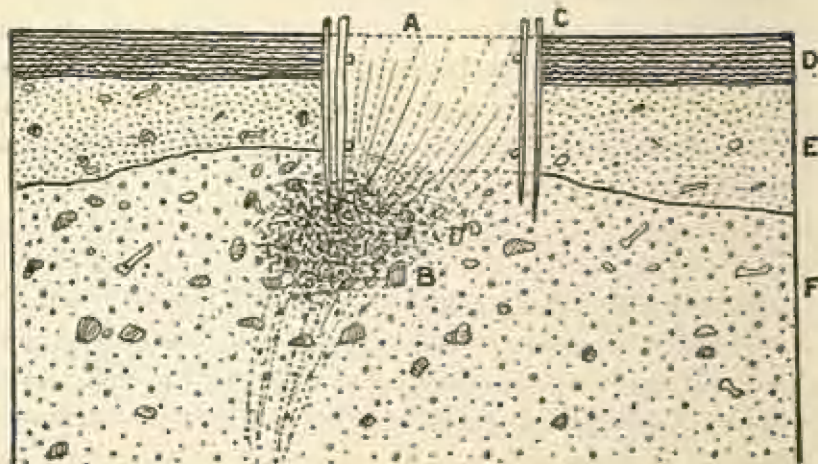


FIG. 5.—Section of the spring deposit and geological formations. *a*, spring; *b*, spring deposit of implements and bones; *c*, vertical boards of spring box; *d*, muck bed; *e*, sand bed; *f*, gravel.

implements. It is clear that the deposits of sand and gravel are not local, pertaining exclusively to the spring or even to the spring group, but that they occupy a considerable area, as if deposited in a large body of water or by a river of considerable size. Our lowest excavation was only thirteen feet in depth, but the sounding rod indicated at least sixteen feet of finely comminuted deposits. There is, however, considerable irregularity in the thickness of the formations examined. The muck bed, which is

two or three feet deep in the vicinity of the springs, gradually changes to sandy loam as the margins of the wash are reached. This muck represents merely the depth of disturbance by the feet of cattle and the consequent interference with free drainage of the water, the growth of marsh vegetation being the result of the constantly moist condition of the trampled area. The bed of sand beneath the muck has an approximately level upper surface, but is not of uniform depth. It is three or four feet thick at the spring and ten or more twenty feet away. In the upper part it is extremely fine in texture, but lower there are layers of fine gravel, and Dr Harper reports, as a result of his examinations, that the sand and gravel are distinctly bedded as if laid down in water. The gravel consists almost wholly of chert, and in the main is finely comminuted but not uniformly water-worn, a large part being angular or subangular. Many of the pebbles, and even some of the fossil teeth, are coated completely with sulphide of iron, giving the effect of gilding.

FOSSIL REMAINS

Our examinations developed the fact that the fossil remains were much more numerous in the spring and near it than elsewhere. There were more mammoth and mastodon teeth within a radius of three feet from the spring basin and between four and seven feet in depth than in all the other material examined. In this restricted area there were at least one hundred mastodon teeth and perhaps twenty mammoth teeth, besides considerable numbers of teeth of fossil bison and horse, as well as the whole deposit of implements and recent bones. In the excavation north of the spring, twenty feet long, four feet wide, and thirteen feet deep, not half a dozen teeth of all varieties were found. In all the excavations outside of the spring the distribution of fossil remains was apparently quite uniform throughout the sand and gravel. Some of the teeth were beautifully preserved, others were so disintegrated as to fall to pieces on being touched, while

fragments were common and presented the appearance of attrition from water transportation.

In seeking an explanation of the prevalence of mastodon and mammoth teeth in the spring, several surmises may be made. Possibly, if the spring is very ancient, the great pachyderms mired more frequently in its basin than elsewhere, leaving their bones in the muck. Possibly the spring funnel was a receptacle for such bones as were weathered out of neighboring formations and carried by water or by gravity into the opening; and possibly movements of the soft deposits, on occasions of particular disturbance or strong pressure from beneath, have been toward the points of least resistance at the spring. The finely comminuted materials, the sand and clay, would be carried away by the strong flow of water, and the great teeth and the coarse gravel would remain in the basin. At least one instance was observed of such movement in the deposits near the spring. A year or two previous to my visit to Afton, and during the wet season, a body of liquid and semi-liquid material suddenly broke through the surface of the ground near the spring, like a bursting bubble, leaving a little hillock which is still distinctly visible. Such movements may have occurred from time to time, the direction being horizontal and toward the spring or directly or obliquely upward.

But perhaps the most plausible theory that can be advanced to account for the accumulation of bones in the spring, is that when the place became an object of special attention on the part of the native tribes, such bones as were exposed in the vicinity were gathered and cast in as appropriate offerings to the beings supposed to inhabit it. This suggestion is strengthened by the fact that the ancient bones are more plentiful in exactly the area in which the bones of modern creatures and Indian implements are found. Indeed, it is not improbable, as elsewhere remarked, that the occurrence of these huge bones gave rise to the superstition in the native mind that powerful spirits made this their dwelling-place—that the spring was the doorway to the realm

beneath. The remains of recent forms were nowhere more than four or five feet in depth, except in the immediate vicinity of the spring funnel where they were deeper and the teeth of a modern horse were, as already stated, found associated with mammoth teeth seven feet deep.

It is clear that in the formations outside of the spring remains of the ancient creatures are quite uniformly distributed, and it appears that everywhere they are fragmental, the bones being separated and broken up as if subjected, at some past period, to vigorous transportation by water or to crushing under the feet of monsters trampling in the muck. In some instances two or more teeth were so related as to show that they had been in place in the jawbone when carried to their present position.

The remains of tusks were also fragmental, and in all cases in a state of disintegration so advanced that only small portions could be saved. The bones are broken with a sharp fracture as if already brittle from decay or silicification when the disturbing agencies were active. In the neighborhood stories are told of the discovery, about the spring, of bones of great size, but the largest piece encountered in our excavations was half of the lower jaw of a mastodon.

The largest mammoth teeth are a lower tooth sixteen inches in length, and an upper tooth eleven inches in length and very massive. Dr Lucas, observing the differences between two specimens (the one being finely and the other coarsely ribbed), expresses the opinion that they may possibly represent two varieties of mammoth—*Elephas primigenius* and *Elephas imperator*, the latter species, proposed by Cope, not as yet having been generally accepted.

Associated intimately with the flint implements in the spring were some of the leg-bones of two or three buffalo, four or more deer, one elk, half a dozen wolves, and one or more horses. These were a little more widely distributed than the flints, but were distinctly a spring deposit, and it is not unlikely that their presence also was in part or altogether due to human agency.

IMPLEMENTS FROM THE SPRING

The implements found in the spring had been subjected to so much disturbance before my arrival that the exact nature of the original deposit could not be determined. They were in compact order as if dumped in a body, but much the same result would have followed from the casting in of single specimens or small lots at various times, since all would settle to the deepest possible point in the spring basin, the position and character of which has probably remained unchanged for a long period. It is impossible to say whether or not the native tribes ever took the trouble to excavate the basin, either for convenience in using the water, to increase the flow in dry seasons, or to facilitate the introduction of the implements; but if the objects deposited were, as we suppose, in the nature of offerings, the spring was a sacred place and no one would venture to disturb it under any circumstances.

It was noted that the remains of buffalo, deer, and wolf were intermingled with the implements and that they were not associated as though the animals had died on the spot, but rather as if the separate bones or dismembered parts of the creatures had been thrown in with the implements. I am inclined to the view that they were cast in as offerings, since there seemed to be a very large and disproportionate number of bones of one kind; for example, not fewer than twenty or thirty of the large, straight leg-bones of the deer were associated directly with the flints.

If statements coming from apparently reliable sources be correct, more than half the deposit of implements had been removed before my arrival. I obtained altogether, counting fragments and partially shaped pieces, upward of eight hundred specimens, not quite half a bushel; so that there must have been at least a bushel (some say a barrel) of implements in the original deposit, the number reaching somewhere between fifteen hundred and two thousand. They include arrowheads, spearpoints, knives and unspecialized blades, besides some roughed-out forms, and fragments. All were shaped by flaking, and the work is for the greater



SPEARHEADS FROM THE AFTON SPRING DEPOSIT

part exceedingly well done. The finished forms appear to be such as would be appropriate to the buffalo hunter equipped for the chase. The spear was, I believe, the main reliance of the Great Plains hunter; but bow and arrow were also in general use, especially for the smaller varieties of game. To pierce successfully the tough hide of the buffalo and penetrate to a vital part, the projectile point had to be thin, long, sharp-edged, and incisive, and the sulphur spring has furnished many perfect specimens of such (plate XI). Our museum collections contain nothing comparable with them, and, excepting such as were probably broken by our excavating tools, all are in perfect condition, as if just from the finishing shop. It is a noteworthy fact that a large number of the spearpoints, as well as knives, had been freshly sharpened when the deposit was made, the old discolored surface being easily distinguished from the more recent chipping (plate XII).

The knife also, of which there are many specimens, was of prime importance to the hunter. The thin blades are from three to six inches in length, from one inch to four inches in width, and show various stages of specialization and wear. Many are, apparently, freshly made leaf-shaped blades, while others have been sharpened and resharpened on one side so as to be scarcely more than half the original width (plate XI, *b*, *c*). One end of the blade is in all cases wider than the other, and, taking the narrow end as the point of the implement, the sharpening is such as to indicate a right-handed use in nearly all cases.

The chert of which the implements are made is of excellent quality; is white and bluish-gray in a majority of cases, but some specimens are quite dark. It is not of the variety found so plentifully in the quarries of the region about Afton, but is of finer grain. The quarries four miles south of the village, as well as those on the Peoria reservation, twenty-five miles to the northeast, furnish a coarser material, generally somewhat yellowish in color. It is manifest that the flint is nearly all from a single quarry or from a group of sites yielding identical material, and

there is no doubt that these quarries will be found in good time and not far distant from the Afton springs. A very few pieces are of other varieties of flint, such as are sometimes found scattered over the surface of the country, and some of these may have been brought in from distant points.

One of the most striking features of these implements is that many of them show distinct evidences of recent reshaping. The old surfaces are quite dark, while the new flaking exposes the clean white material. Many arrowheads and spearpoints have been retrimmed, some slightly, others over a large part of the surface; while the knives have been carefully sharpened along one edge (plate XII, *a*). Strangely enough, there were many fragments and chips of chert scattered through the spring deposits, as if work had been done on the spot or near at hand and the flakage thrown in along with the shaped objects. Traces of what appeared to be arrowshafts of reed were also found.

BONE AND ANTLER IMPLEMENTS

The bone implements were not at first recognized as such, and probably many were thrown away, being taken for mere fragments of bone. There are three varieties of these objects—two made of antler and the other from leg-bones of deer and birds. The most numerous are from the heavy end of the antler, and the length varies from four to seven inches. The base retains its natural form and the other end is slightly rounded off. These objects are of the type known as flint-flakers in the Middle-West, and were probably supplied with handles fastened about the middle portion, making them available for roughing-out the flint blades by percussion.

A second form is such as would be produced by dividing longitudinally the implement described above and rounding down the ends and edges. They were associated with the flint knives, and in such an intimate way as to lead to the supposition that they may have served as handles. They could have been set



KNIVES FROM THE AFTON SPINOUS DEPOSIT. THE LARGER SPECIMEN SHOWS FINELY SHARPENED EDGE.

together in pairs inclosing the upper edge or back of the knife blade and lashed or cemented firmly in place. In two or three cases pairs were found so nearly matching in size and curvature as to have been successfully employed in this way. It is to be noted that these objects are very like implements used in some regions for pressure-flaking in the final trimming and sharpening of flint implements. Such implements would naturally form a part of the set of tools carried by a hunter of the Stone Age when about to set out on a prolonged expedition.

Among the many partially decayed objects of bone there were specimens resembling awls. The larger are made of the lower leg-bone of deer or antelope, and the smaller of the leg-bone of some large bird—a heron or sand-hill crane. Such utensils were an essential feature of the outfit of the lodge-dweller of the Great Plains, whose clothing and dwellings were necessarily made of skins sewn together.

SIGNIFICANCE OF THE DEPOSIT

As already indicated, the conclusion was reached at the outset that the casting of implements into the spring was not a caching or hiding of these precious objects, much less an idle, meaningless act. Stone implements were the most important possessions of the hunting tribes. Stone was their iron and steel. A vast amount of labor was expended in digging it from its bed in the hills and in reducing it to the forms desired, a work necessarily performed by men possessing great skill. The placing of these articles in the spring must, therefore, have been an act of great importance to the people concerned, and was doubtless in response to the demands of superstition. Water, and especially sources of water supply, have ever been regarded by primitive men, and even by some more advanced peoples, as dwelling places for spirit beings, and when sacrifices were believed to be necessary, the most precious possessions were cast in and no one was sufficiently bold to molest them. In fact, such a spot was generally regarded

as sacred, and was avoided by all save those who were properly qualified to approach and make the offerings—the medicine-men or priests. One of the most striking facts connected with the Afton spring is that, although tradition indicates that it was a great gathering place for the native tribes, no traces of camping or dwelling were found in the vicinity.

That sacrifice to spirit occupants of springs was a widespread practice among the tribes of the west is clear, although observations of the fact are somewhat rare. Dr J. Owen Dorsey tells us that the Dakotas believe the buffalo to be of subterranean origin and refers to a tradition which asserts that one day when a principal man of one of the tribes was fasting and praying to the Sun-god, he saw the ghost of a buffalo rising from a spring.¹ The Sioux have also water-gods and mystic beings associated with bogs.

In a recent publication by Dr A. S. Gatschet, reference is made to a sacred spring or well of the Omaha, located in western Kansas, as follows:

"This curious water receptacle is situated on the top of a hill, and has a nearly circular form with about thirty feet diameter. All the hunting tribes of the prairie regard it with a religious interest mixed with awe; the Pani called it, or call it still, *Kitch-Walushti*; the Omahas, *Ni-waxube*, both names signifying sacred water. The miraculous quality of this pool, which chiefly astonishes the Indian mind, consists in a slow rising of the water whenever a large number of people stand around the brink. The water of the pool is perfectly limpid and considered to be bottomless; it harbors an aquatic monster which engulfs all the objects thrown into it, and never sends them up again. Indians offer to it beads, arrows, kerchiefs, earrings, even blankets, and all sink down immediately. Before putting clay or paint on their faces, the Indians impregnated these substances with the water of the well. They never drink of this water, but to allay their thirst they go to the neighboring Solomon river. Before buffalo hunting became a thing of the past, large hunting parties of natives often gathered around this pond source, and the following narrative circulated among them as

¹ Dorsey, J. Owen, *Eleventh Annual Report of the Bureau of Ethnology*, p. 538.

a truthful report of what really occurred: Two Panis once returned with their horses. Having dismounted near the sacred water, one of the men stepped upon a turtle of the large species frequently found in the vicinity, about three feet long. The man's feet stuck to the turtle; he could not disengage himself from its treacherous shell, and when the turtle ran with his charge into the pool, the Indian was soon beyond possible rescue. His stupefied companion had seen the occurrence and went home to tell the tale."¹

PEOPLES CONCERNED IN THE DEPOSIT

The Afton region was occupied by tribes of Siouan stock, and particularly by the Osage who, in historic times, overran Neosho valley and neighboring districts. That it was some of these people who cast the offerings into the spring seems highly probable from the fact that the whole group of artifacts was just such as they would have used before the introduction of iron, and facts brought out by correspondence with the Indian agent for the Osage tribe make it certain that they alone were largely, if not wholly, responsible for the deposit.

The following paragraph is quoted from a letter from Mr O. A. Mitscher, Indian agent at Pawhuska, to Dr R. H. Harper of Afton, who had written making inquiries :

"SIR : Referring to your letter of the 7th inst. relative to a certain spring located between Afton and Miami, in which were found numerous large teeth, about five hundred arrowpoints or spearheads, etc., and asking me to learn from the Osage Indians what, if anything, these signified, I have the honor to report that I submitted this matter to old man Red Eagle, the oldest man in the Osage tribe, who distinctly remembers the spring and states that it used to be the meeting place of the old medicine-men of the tribe when he was a young man; that the spring was held as a sacred place, and the doctors met there to hold their councils.

"The arrowpoints or spearheads were worn by the medicine-men as medals. It was the custom of the tribe to offer the spearheads and other tokens to appease nature or their gods by depositing them in the spring, which they considered holy ground. This custom was observed whenever the tribe went on the war-path, to insure victory; when a

¹ Gatschet, A. S., in *Journal of American Folk-Lore*, vol. II, no. IV.

child was born, to secure blessings for the child; and for any unusual undertaking, to make it successful. These deposits of tokens in the springs were also good-luck offerings.

"The spring was usually a shrine resorted to by the old-time Indians to commune with the unseen world. This custom, however, is not now in vogue, and has not been practiced by the Indians for some time.

"I am assured by Red Eagle that when he was a god, and before the white people intermingled with the Indians, it was the practice of the medicine-men and the leaders to gather at these springs for the purpose of holding councils, etc."

Some of the tribes farther west seem to have had similar practices, and instances of sacrifice to springs are recorded. Mr F. H. Cushing and Dr Walter Hough report the ceremonial use of springs in various localities, and Mr Thomas Ewbank speaks of a sacred spring near Zuñi, New Mexico, as follows:

"The spring is cleared out every year, when an offering is made to the spirit of the font, of one or more water-pots, which are placed on the wall. A dozen or more whole ones were observed, while fragments abounded. Some of the remaining vases are reputed to have been offered centuries ago by the pueblo caciques. Specimens were brought away, notwithstanding the tradition that whoever abstracted one would be struck by lightning. As the Zuñi Indians do not have recourse to artificial irrigation, they depend entirely on rain; and it is their belief that, if they neglected the annual ceremonies at the spring, their crops would be destroyed by drought."¹

Early in 1893 some Navaho Indians brought to Mr T. V. Keam, the trader at Keam's Cañon, in northeastern Arizona, several specimens of antique pottery which they had uncovered while digging for water at a point about five miles south of the trading-post. Mr Keam had the Indians continue the work, with the result that in the course of a week's digging they unearthed several hundred specimens of ancient pottery. Mr James Mooney, of the Bureau of American Ethnology, published the following statement relating to these finds:

¹ Ewbank, "Report on Indian Tribes," *Pacific Railroad Survey*, III, 1853-54, p. 44.

"On Sunday, February 12, in company with Mr Keam, I rode over to the spot where the discovery had been made. It is in a rincon or side canyon, walled in by steep cliffs perhaps 150 feet in height. Toward the south the canyon opens out into an extensive valley [Jedito valley] occupied by several families of Navajos with their herds of sheep and goats. At the north end of the canyon several springs ooze up through the rocks and sand drifts, and it was in excavating one of these that the discovery was made. Several springs have now been dug out, but pottery has been found only at one. On climbing the steep ascent to the top of the mesa we find the remains of the ancient pueblo overlooking the valley on the east. It must have been an extensive settlement in its day, as large as any of the existing Hopi villages, as the ruins cover an area of perhaps four acres, and the whole neighborhood is strewn with fragments of stamped and painted pottery and flakes of flint and obsidian. The foundations of the walls are still well preserved, so that the outlines of the room can be distinctly traced, and by digging out the accumulated sand and debris it is probable that nearly the whole ground-plan might be restored. At the foot of the cliff, toward the south, traces of burnt clay and charcoal show where the pottery was made, and the steps cut into the rock by which the ancient inhabitants descended to the spring are still plainly visible.

"Several of the Indians were at work digging while we were there. They had excavated the principal spring, where the pottery had been found, down to bed clay, and had thrown the loosened sand out at the top. The instruments used were their hands and two long-handled shovels. The ground all around was strewn with fragments of pottery thrown out, and numerous other fragments were imbedded in the sand. It was evident that probably half the original number, including the largest specimens, had been destroyed in the digging process. By working in from the side, instead of from above, and proceeding carefully to remove the sand with the hands and some such small tool as a knife or a stick, probably three hundred or more pieces might have been taken out intact. Most of those preserved were small, finely decorated with designs in black and reddish brown, and of most unique shapes.

"According to the statement given to Mr Keam by the Hopi, who have occupied this region from time immemorial, the ruined pueblo, which they call Kawaika, was formerly occupied by the Indians now in Laguna pueblo, west of the Rio Grande. They state also that their ancestors used to deposit jars and bowls near springs as votive offerings to the water gods. This would account for the fact that the

vessels were all found close together at the principal spring, and appear from their size and shape to have been intended for religious rather than practical purposes. The custom of making offerings at springs to the water deities is common to all primitive tribes, and among the Arapahos and Cheyennes I have myself seen shawls and strips of calico hung up as sacrifices upon the bushes about every little watering-place in the vicinity of a regular camp."¹

Recent correspondence with Mr A. R. Graham, of Ferro, New Mexico, has brought to my attention the discovery of an offering spring at Hudson, New Mexico, and the following interesting paragraphs are quoted from his letter of January 18, 1902:

"The Hudson Hot spring (now called Faywood), is situated at the foot of a mesa four miles west of the Rio Mimbres—twenty-five miles due east of Silver City, this county, and about the same distance from Deming, N. M. It is directly on the old California highway, called the Sante Fé trail, and was used for many years—prior to the coming of the railroad in 1884—as a stage station, being the first station west of Cook's Peak cañon, famous for its numerous hold-ups and Indian massacres in the early days.

"The very highly medicinal virtues of the waters were first discovered by Richard Hudson while serving as colonel of California volunteers in 1863. He located at the spring after being mustered out, and held possession until 1894, when I purchased the property. The flow from the spring then came from a cistern-shaped hole in the center of a round-top mound, elevated about thirty feet above the average surface surrounding the mound.

"The regular flow of the spring is five thousand gallons per hour, and never, to my knowledge, varies from this. I purchased the property for the purpose of establishing a health resort—the analysis showing the water to be unexcelled for the cure of rheumatism and stomach disorders. I built a large hotel at the east foot of the spring mound, and in order to utilize the hot water for bath-house and hotel use—including heating of the hotel through radiators—it was necessary for me to clean out the spring and wall it up to prevent loss through various small leaks through the mound formation. It proved a costly task, but I felt remunerated by the discoveries. The natural size of the spring excavation was twenty-five feet in diameter, and when I reached the depth of twenty-six feet I found the spring enclosed by

¹ James Mooney in *American Anthropologist*, July, 1893, p. 283.

a wall of "red marlite stone," round and symmetrical as man could build. Thousands of tons of dirt and rock had been thrown into the spring, and after removing this to the depth of twenty-six feet, I began to find Indian remains and relics of Indian art. The mound, twenty-six feet in height, formed on top of the "red marlite" formation, had been made from the deposit of minerals in the water.

"At a depth of twenty-eight feet we discovered a distinct burial of a human being covered with mesquite bush, on top of which were bowlders. There were three such burials—or the remains of human beings—discovered between the twenty-eighth or thirty-first foot levels, and with each one were found war-clubs of stone, spearpoints, arrowheads, one wooden bow, almost complete, beads, mortars, etc.

"We secured quite well preserved parts of several skulls and other parts which would indicate that the people were of average stature. I supervised the whole work, and, with the assistance of my wife, now have nicely preserved and arranged, in a cabinet, every relic taken from the spring. The principal relics being: 1. Parts of skulls and bones of several human beings. 2. Over fifty spearheads and arrowheads of every shape and style of workmanship, the spearheads being valuable for size and symmetry. 3. Nine large war-clubs, made of stone. 4. A large variety of teeth of animals, as well as large bones of extinct animals. 5. The most interesting relics are ten stone pipes, from four to seven inches in length. 6. Flint hatchet and a stone hammer, together with stones worn flat from use, beads made from vegetable seed and bird bones; part of two Indian bows, with which was found a quiver, in which was quite a bunch of long, coarse black hair that was soon lost after being dried.

"In the vicinity of Hudson Springs, within three to eight miles, there are numerous burying grounds and other evidences of dwellings of the earlier Indian tribes—the graves all containing more or less decorated pottery, a few good samples of which I also have.

"Within one mile of this hot spring are two cold springs, while one and one-half miles to the west is another warm spring of medicinal water (temperature 98°) that flows nearly one million gallons daily. This spring comes up from the south base of stone fortifications of considerable extent, the elevation standing out on a level mesa in a commanding position."

In the East, instances of the discovery of relics of arts in springs are rare. A deposit of flint blades found in a spring in North Carolina is exhibited in the Smithsonian Institution.

The most notable examples of sacrifices of this general class are recorded by explorers of Central and South America, where offerings of gold and precious things of various kinds were cast into lakes, streams, springs, and the deep *cenotes*, or natural wells, to appease the gods believed to dwell therein.

Perhaps the most important fact connected with the finds at Afton is that we have here for the first time a large assortment of stone implements and other objects identified fully with a particular tribe and period. We have, as it were, recovered a notable chapter directly out of the prehistory of the primitive buffalo-hunting tribes of the Great Plains.

A second point of exceptional interest is that the deposit represents the offerings of a known tribe to the spirit beings with which the native conjurers had peopled a spring.

A third advantage of these over other deposits or caches of implements in the general region is that the exact motives of the makers of the offerings are made known to us. The story of the old Osage medicine-man conforms in every respect with the ideas formed by ethnologists through studies in other regions and among distinct peoples.

The association of human relics with the remains of extinct animals is always a matter of much scientific interest, but it appears that in this case the association has little significance, the fossil bones belonging in the original geological formations of the region, while the human relics are of recent introduction into the spring.

The course of events witnessed by these sulphur springs on the plains of the Neosho may be outlined somewhat as follows: About the close of Pliocene times, or in the earlier part of the Pleistocene, the great plains of the interior of the continent were overrun by vast herds of elephants, horses, bison, and other strange creatures, which slaked their thirst at the bubbling springs, if they existed, or otherwise in the streams and lakes of that time,

leaving their carcasses to rot there. Then the Ice Age supervened, and vast changes came over the region and the life thereof. The glacial chill drove the herds to the south or destroyed them, and the glacial floods buried their remains in deposits of sand and gravel. Then there arrived, from no one knows where, the buffalo, the elk, and the deer, with attendant swarms of carnivora and minor beasts. With these, or following them, came the Indian, with spear and bow and arrow, and the era of the chase began. Afton springs were still flowing and the beds of muck received the bodies of the dying herds as before. But man introduced a new element: the springs, abounding in bones of unknown monsters, became places of veneration and were peopled with spirits of the savage pantheon, and to these sacrifices were made, the most precious possessions finding a resting place in the sulphurous shrine. The last, the present, episode in Afton's history, witnessed the disappearance of the buffalo and the Red Man, and the coming of new cattle, a new horse, and a strange people. Then follow the keeping of herds on the plains about, the building of towns, the construction of the railway, and finally the cleaning out of the springs and the discovery of its interesting treasures.

ON THE INTERPRETATION OF A CERTAIN GROUP OF SCULPTURES AT COPAN

By GEORGE BYRON GORDON

In the monograph on the Hieroglyphic Stairway,¹ reference is made to sculptures X and Y as having special interest in connection with a fragment found under peculiar conditions among the ruins of the stairway during its exploration by the Peabody Museum.

Sculpture Y was dug up in 1893 in the great plaza at Copan, at the base of Stela 4, where it had been placed beneath the pavement probably at the time when the stela was set up.

Sculpture X was found, in the following year, a mile to the westward of Stela 4. This stone had served as a pedestal for Stela 5, now fallen and broken. The pedestal was still in place when found. It had been placed about a foot below the pavement of small stones that surrounded the stela.

These two sculptures, of which casts are now in the Peabody Museum, are alike in size and shape, and in the character of the design carved upon them. They measure 3 feet by 4 feet. Sculpture Y is 1 foot 3 inches in thickness, and its companion is somewhat less. The sculpture is in very low relief; it is more crude than that on the better-known monuments, it differs from the latter in technical character, while the conventional design differs from anything found among the Maya ruins, with the single exception of a portion of a similar design found on the underside of a block forming part of a step in the Hieroglyphic Stairway, this block having been cut from a larger piece, and part of the sculpture destroyed.² Add to these characteris-

¹ *Memoirs of the Peabody Museum, Harvard University*, vol. I, no. 6, p. 19.

² *Ibid.*, pl. xiii, v.

tics the circumstance that they were found under similar conditions, and we may reasonably assume that these three sculptures form a group by themselves, differentiated from all other objects found at Copan, or elsewhere among the Maya cities, by certain peculiarities which they possess in common, and belonging to a period anterior to the era of constructive activity represented by the stelæ and such architectural works as the Hieroglyphic Stairway, and measured according to accepted methods by the dates

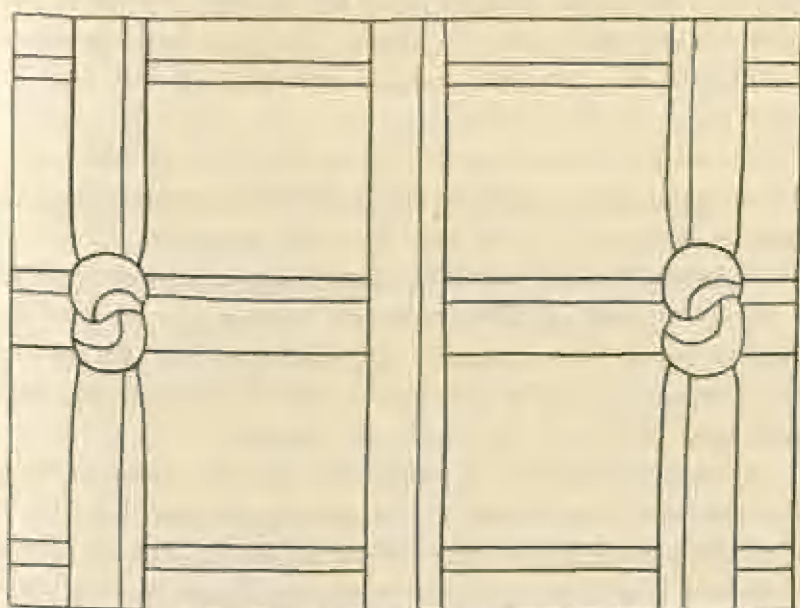


FIG. 5.—Top of sculpture *y*. (Design of top of sculpture *x* is identical with this.)

inscribed upon these monuments. This era, which may be called the later era of the Maya culture, apparently lasted at Copan, according to these dates, about a thousand years. The questions with which we are now concerned are : What is the age of sculptures *x* and *y* relative to the dates of this later era? Can this question be answered by means of the inscriptions on the sculptures themselves?

Without giving a definite answer to either of these questions,

it is my purpose to offer some suggestions which may afford a possible solution.

The design of sculptures X and Y is as follows: Three bands run transversely across the top, with a longitudinal band in the center. These bands are carried down the vertical sides, and although the bottom is plain, the character of the design shows that they are to be understood as encircling the stone. Two lines are drawn longitudinally near each of the edges, running parallel to the longitudinal band in the center. The top of the stone is thus divided into four equal compartments, which are left plain (fig. 6). The two longer sides are each divided into two equal compartments by the three transverse bands, and each of these is further divided by a horizontal band which passes across each of these sides. Each of these horizontal bands is tied in a knot at the point where it intersects the central transverse band encircling the stone. The other two transverse bands are similarly tied at the points where they intersect the longitudinal band, the ends being carried over and hanging down the sides of the stone, overlying the main part of the band and ending half-way down.

In each of the divisions formed on the sides of the stone by the transverse bands stands a human figure. These personages, which stand facing each other, seem to hold in their hands the ends of the horizontal bands, as if drawing the knots. Each pair might thus be regarded as engaged in tying a knot. On the ends of each stone are sixteen hieroglyphs, disposed in groups of four.

This description applies equally to either of the sculptures X and Y. The main design is simply that of a bundle encircled by four bands, with two other bands on the sides. The most striking feature of the design in question consists of the bands, six in all, several of which have knots tied in them. An element of this sort is of frequent occurrence in the inscriptions at Copan and elsewhere. A good example of the use of this symbol may be seen in fig. 10, C 3. The most remarkable example of the use

of the device of the knot is an altar at Copan, which represents a huge knot encircled by a twisted rope (fig. 7). This rope consists of two strands, the turns of which constitute twenty divisions. Although unable to prove it, I would like to suggest that this symbol may mean simply the circle of the Katuns (represented by the rope with its twenty convolutions) completing itself in the Cycle (represented by the knot).¹ My reason for this suggestion will appear later.

The significance of the knot symbol as used in the inscriptions and the codices has not been determined, although Dr Förstemann suggests that the name of the 52-year period was represented in the codices

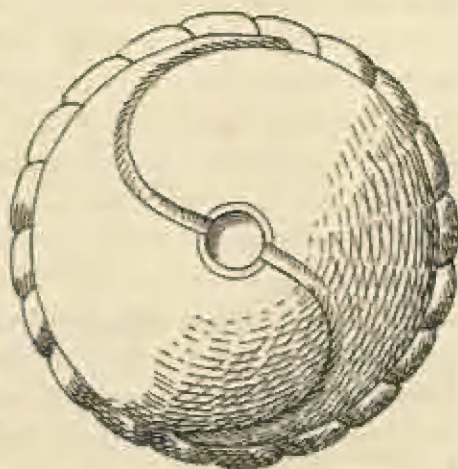


FIG. 7.—Round altar in front of Stela 4, Copan.

pictorially by a character composed in part of a knot or a knotted band. In Mexican picture-writing this period is represented by a bundle of sticks tied with cords, and the name of the period, *Xihmolpilli*, means literally "the binding up of the years." While the analogy does not furnish a clue to the meaning of the Maya symbol, it is suggestive.

It is not known what terms were applied by the Mayas to their time periods, and the ordinary symbols used to represent these periods convey to us no idea of these terms. Each of the periods in the inscriptions is distinguished either by a face with which

¹ There has been a good deal of speculation and some controversy over the design of this altar. Dr Hamy (*Journal of the Anthropological Institute*, Feb., 1887) finds in it the Chinese Tai-Ki. Dr Hinton attempts to prove its identity with the svastika and the cross, while Mrs Nuttall, in her valuable work, *The Fundamental Principles of Old and New World Civilizations*, assigns to it the character of a cosmical symbolism of elaborate significance.

the artists took great liberties, or else by a stereotyped symbol. But whether either of these conveyed the name of the corresponding period, directly or otherwise, it is impossible to say. It may be that the symbols used for the periods in the initial series are not derived from their technical names or intended to suggest these names; but it would be strange if somewhere in the inscriptions symbols were not used which were intended to express, either pictorially or ikonometrically, or phonetically, the technical names of the periods.

In the initial series on Stela I at Copan, the head representing the Cycle is surmounted by a knot (fig. 8).



FIG. 8.—The Ninth Cycle on Stela I, Copan.

In fig. 9 is shown a small stone pillar or table from Copan, which measures 14 X 14 X 18 inches. On one side it has an inscription (fig. 10). The other three sides are occupied by bands which are to be understood as encircling the stone, and are tied in knots on the side opposite the inscription.

The ends of the bands project to the corners of the stone, forming an ornamental border at either edge. It will be seen that there are nine of these bands, a number suggesting at once the ninth Cycle,—the Cycle in which nearly all the dates fall. If, however, a band of this sort meant a completed Cycle, the nine bands would, by representing nine complete Cycles, imply the tenth Cycle; that is to say, the Cycle which, according to Goodman's system, is called Cycle 9.

The inscription on the fourth side of the stone begins with a number made up of Kins, Uinals, and Tuns, and in D 1 is the date 3 Chuen 4 Pop. Two of the numerals are broken away from A B 1, so that it is impossible to read the value of the number expressed; but since it is less than one Katun, if it gives the distance of 3 Chuen 4 Pop from the beginning of Cycle 9, then that date must be in the beginning Katun of that Cycle, and, indeed, we find it in this position, as follows:

54. 9. 0. 15. 10. 11.

Now, the last three numbers in this series may well have been those given in A B 1. To show how well they fit in the space allowed, the glyphs are reproduced in fig. 11, with these numerals in place.

Moreover, in A 3 we find the Katun sign with the number 1, which may be a declaration that the date is in a first Katun or beginning Katun, for I can see no reason why the beginning Cycle, Katun, Tun, Uinal, and Kin should not have been called the first. Bowditch has pointed out very strong grounds for suspecting that the days of the month were numbered from 0 to 19, but I have seen no such evidence that the same plan was

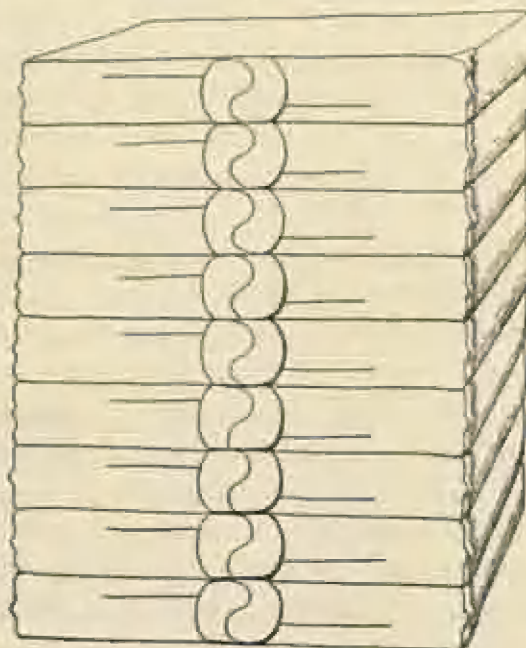


FIG. 9.—Small stone pillar from Copan, having an inscription on one side and nine knotted bands about it.

adopted in regard to the periods of the long count. I know of no evidence contrary to the idea that the Mayas, in writing their initial dates, gave each period the number of the current period, *less one*; that is, they wrote against each period the number corresponding to its predecessor in order that these numbers might serve as factors. At the same time, each period may have been spoken of in terms which expressed its exact distance from the beginning of the next higher period; thus, the beginning Katun of a Cycle may

have been called the first Katun of that Cycle, and so on. In the case of Stela c at Quirigua, where the beginning day of the

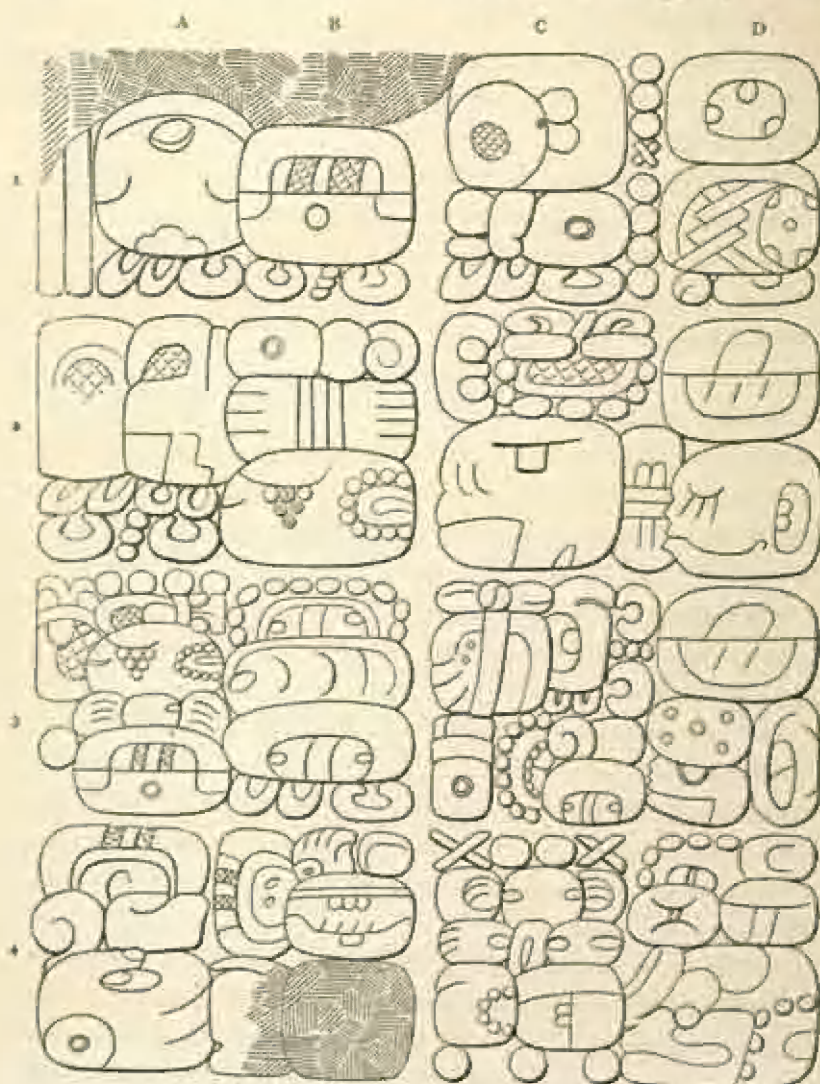


FIG. 10.—Inscription on a small stone pillar from Copán.

beginning Cycle is given, and the Cycle number is 13, the number may mean that the thirteenth Cycle of the fifty-third Great Cycle is complete. It is obviously immaterial whether we write 54. 0.

0.0.0.0 or 53.13.0.0.0, and so long as the real significance of the beginning glyph is not understood and the method by which the numeration of the Great Cycle is expressed remains unknown, it is not clear that the beginning glyph in this initial series is really the same as that on the opposite side of the same monument. Again, the last glyph on the face of Stela 3 of Piedras Negras might be translated . . . *the fourteenth Katun just completed or fourteen Katuns having elapsed.*

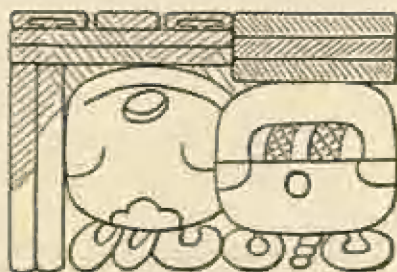


FIG. 11—A R T of Inscription shown in Fig. 10, with numerals restored.

Again on the Tablet of the Cross where the initial date is in the fifty-third Great Cycle (Goodman), and farther on the beginning date of the fifty-fourth Great Cycle, 4 Ahau 8 Cumhu, is followed by the Cycle glyph with the number 13, the more likely meaning would seem to be that the thirteenth Cycle, that is to say the last Cycle of the Great Cycle announced in the initial series, is ended.

And again on the Tablet of the Foliated Cross, the second reckoning after the initial date completes two Cycles from the beginning of the Great Cycle, and C D 7 may be translated: *the second cycle is complete.* The same remarks will apply to similar passages in other inscriptions, such as Temple of the Sun Q 15 and Altar 5 at Copan.

Furthermore, on Stela 8 of Piedras Negras, D 1 C 2 above, is a date which Bowditch, while leaving it open to question, is inclined to interpret as 9 Imix 19 Kayab. The day number seems to me to be 8, and the date 8 Imix 19 Kayab is in the thirty-third year. Now, the chances are very strongly in favor of the dates on this monument being in the ninth Cycle of Great Cycle 54. D 3, following the date is the Katun sign with the number 4. The date is not in Katun 4 of Goodman, but if the beginning

Katun was called Katun 1, then Katun 4 would correspond to Katun 3 of Goodman, and in fact the date occurs in that Katun, its position in the long count being as follows:

54. 9. 3. 4. 3. 1. 8 Imix 19 Kayab.

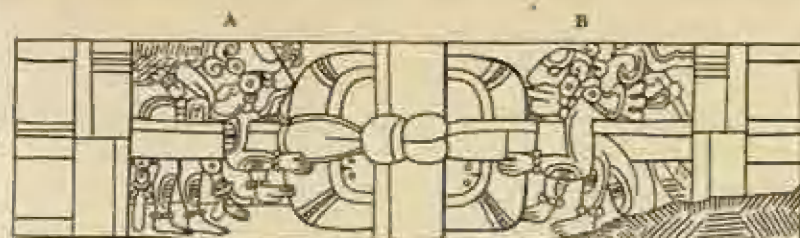
On the lower part of the same Stela, E F 1, is another date. Bowditch, although disposed to regard it as 5 Imix 19 Chen, expresses doubt as to whether the month is Chen or Zac. The reason given by Bowditch for regarding it as Chen is that the date in this case would seem to be referred back to the normal date by the preceding reckoning, but the loss of a portion of this reckoning, as well as the preceding date, makes these relations altogether uncertain, while the month glyph is certainly very much like Zac. 5 Imix 19 Zac is also in the thirty-third year. F 2 following the date is the Katun glyph with the number 1. The date does not fall in Katun 1 of Cycle 9 according to Goodman's method, but it does fall in the beginning Katun of that Cycle. The position of the day in the long count would be

54. 9. 0. 11. 2. 1. 5 Imix 19 Zac.

On Stela 8 of Copan, to cite one more case, is an inscription beginning with the familiar date 6 Caban 10 Mol, and the ninth glyph following may be read fourth Katun. If our theory is correct we might expect to find this date in Katun 3 of the numeration of the initial series, which is the third Katun of Goodman's method. We do find it in that Katun, and the place of this important date in the long count would be as follows:

54. 9. 3. 8. 12. 17. 6 Caban 10 Mol.

All this is in opposition to Goodman's theory respecting the numbering of the Katuns, and would tend to show that the beginning Katun of a Cycle was called the first, or Katun 1. I bring forward these illustrations in order to support the argument that the date 3 Chuen 4 Pop in fig. 10 may be declared by A 3 of that inscription to be in a beginning Katun. It does occur, as we have seen, in the beginning Katun of Cycle 9. It also occurs



RELIEF ON FOUR SIDES OF SCULPTURE X, COPAN

again in a beginning Katun after the lapse of 780 years, but in the latter case the distance from the beginning of the Cycle would be 6. 7. 11, which does not agree with the text in A B 1 (a circumstance worth noticing even if we cannot be sure the number is intended to represent that distance). Besides, there is a very strong antecedent probability that the date is in Cycle 9, and finally, that number is indicated by the bands about the stone.

In fact, although it cannot be proved conclusively, there are very strong indications that the date recorded is that expressed by the series 54. 9. 0. 15. 10. 11, and that the Cycle in which it belongs is indicated by nine knotted bands. In that case we would be led to expect to find elsewhere a given Cycle indicated by a number of similar bands corresponding to its numerical denomination in the initial series.

The description given of sculptures X and Y applies to either of these stones. When we come to the minor details we find that they differ in certain of these details and resemble each other in others.

Comparing A 1 in plates XIII and XIV we see that, though very much alike, they present certain differences. The hand which is raised in plate XIV is lowered in plate XIII. The two faces, although they cannot be said to resemble each other very much, have beards in common. But the most important and most striking difference is in the objects in front of the respective figures. The fan-shaped object in plate XIII is replaced in the other by a sort of dragon.

The same facts are brought out by a comparison of B 1 in the two plates. All these figures have peculiar markings on the limbs very much like the figures representing the period numbers in the initial series on Stela D, Quirigua; but it would seem as if the figures in the present case represent not the numbers but the periods themselves.

The figure in A 2, plate XIV has a great curved tooth at the

back of the mouth which at once suggests the Uinal head, and the corresponding figure in plate XIII has a similar feature. If these figures represent the Uinal, the figure opposite in each case must represent the Kin. It will be seen that here again the fan-shaped object in front of each of these two figures in plate XIII is replaced in plate XIV by other objects, that in B 2 being partly destroyed.

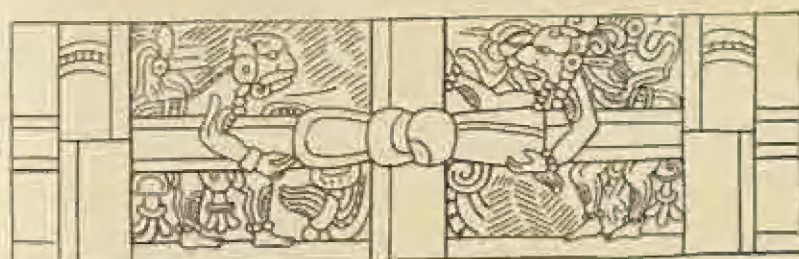
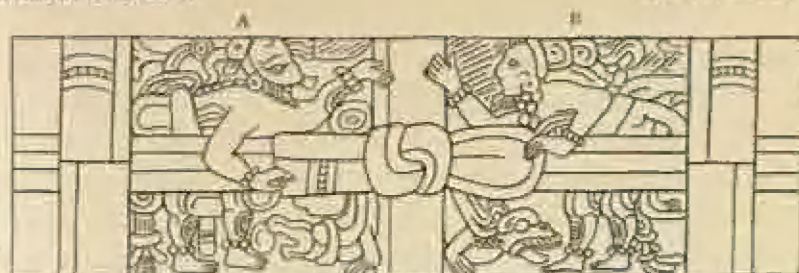
Confining our attention to plate XIII, it will be seen that the symbol occupying the middle of each of the two long sides of the stone between the figures is not unlike the "full count" sign whose numerical value is most conveniently expressed by 0.

The corresponding signs on the other stone, plate XIV, are unfamiliar, and if they are really numerals there is nothing to indicate their values.

Coming to the glyphs on the ends of the stone, we have, on plate XIII, A 3, the date 11 ? 3 Kankin. The day sign is unfamiliar, but it must be either Ahau, Chicchan, Oc, or Men. If it has little resemblance to the first it has less to the other three.

Supposing, then, that A 2 is the Uinal (as the curved tooth or tongue would seem to indicate), that B 2 is the Kin, that A 2 is the Tun and A 1 the Katun, and that the object in the center is 0; then we would have the following series: 0. 0. 0. 0. 11 Ahau 3 Kankin; that is, a full count of Katuns, a full count of Tuns, a full count of Uinals, and a full count of Kins, with the date 11 Ahau 3 Kankin. According to this, the day is the beginning day of some Cycle of some Great Cycle: a day so designated can be the beginning day of a Cycle once in 374,400 years. Referring to Goodman's perpetual calendar we find that this date is the beginning of the sixth Cycle of the fourth Great Cycle.

Now we have noticed that the number of bands on the stone is six and that they divide the top of the stone into four. If, therefore, a band means a complete Cycle, we should expect to find the date 11 Ahau 3 Kankin at the beginning of a Cycle 6 (Goodman's method), which is exactly what we do find. It can



RELIEF ON FOUR SIDES OF SCULPTURE Y, COPAN

hardly be said that we should expect to find the date in the fourth Great Cycle. However, this is where it comes, and the number 4 is expressed on the top of the stone by the four divisions. According to these deductions the date on sculpture x would be 4.6.0.0.0.0.11 Ahau 3 Kankin.

Between this date and the beginning of Cycle 9 of Great Cycle 54, which may be said to correspond with the beginning of the later era,—the era of the stelæ,—there intervenes a period of just 50 Great Cycles and 3 Cycles; in round numbers about 250,000 years according to Goodman's method.

This result is not so satisfactory as it might be, and it would perhaps be more convincing if it did not agree quite so well with our original assumption regarding the relative antiquity of the sculptures. It is evident that the proposition put forward regarding the meaning of the sculpture will require further elucidation before it can be accepted or rejected. It is in the hope that further evidence bearing on the question may be forthcoming that the matter is brought to the attention of students.

When we consider the fact that no change can be detected in the form of the glyphs, and scarcely any in their treatment by the sculptors, between the beginning and the end of the later period, it appears evident that the beginnings were much more remote. During a thousand years,¹ according to the dates at Copan, the

¹ While writing this paper I have read Mr Bowditch's article *On the Age of Maya Ruins* in the last number of the ANTHROPOLOGIST. The dates on which the figures in that article are based are those which would seem to admit of no dispute, not only in regard to their actual reading but as regards the historical association of the dates with the respective monuments. The figures are therefore the most conservative possible. It should be mentioned, however, in view of the disparity between these figures and those that I give in this paper, that the dates on the Hieroglyphic Stairway are not taken into account in the article in question.

There are two other dates, one at Yaxchilan and one at Quirigua, which, while taking them into consideration and admitting the possibility of their being relative to contemporary history, Bowditch does not allow to enter into his estimate of actual duration on the ground that they may have been traditional.

It will be understood that all estimates of the relative age of Maya monuments are based on the assumption that the dates used as a basis for these estimates reveal

glyphs remain uniform and show no measurable change such as would be coextensive with the development of the art of writing. It is perfectly evident to anyone who studies the inscriptions bearing dates in the ninth Cycle of the fifty-fourth Great Cycle and later, that there was during this time no transition from one degree of culture to another, at least so far as the art of writing and the methods employed in its transmission are concerned.

It will also be admitted, I think, that this art of writing, used by the Mayas, had passed through many transitions which could not fail to reveal themselves even to those ignorant of the methods employed, before it reached the stage where we make its acquaintance. It would probably take ages to develop such a system, and whether the characters were transmitted to stone or to some material less durable, they could not fail to furnish visual evidence of gradual development or sudden transition. There must have been written records on material of some sort which, if we had them, would illustrate the process by which the hieroglyphics were evolved, and they would of necessity extend over a long period of time, for it is generally agreed that such processes, especially at the beginning, are slow. The period of a quarter of a million years will probably be rejected on the ground that it is altogether too long, but the interpretation of the sculptures which I have suggested need not therefore be discarded since it is quite possi-

the distance between the starting-point of the time count and the erection of the monuments. While this has not been proved, and while a few of the dates would seem to be certainly traditional, that most of the monuments and their initial dates are correlated would seem almost to be self-evident.

It should be mentioned that the last date on the Hieroglyphic Stairway—the one that introduces the largest time element into my estimate of one thousand years as the duration of the later period at Copan—is partly effaced and may possibly be regarded as admitting an element of doubt. If it should prove that both this date and that given on page 135 of this paper are correctly interpreted, we should have :

Latest date.....	54. 15. 25. 0. 14. 0
Earliest date.....	54. 0. 0. 15. 40. 21
Interval.....	0. 15. 14. 3. 18

equal to almost exactly 1040 years as the duration of what I have called the later period at Copan alone.

ble that changes in the calendar affecting the long count might account for the greater part of this apparently inconsistent period.

The inscriptions on sculptures X and Y are not long enough to provide material for an estimate of the amount of differentiation between these specimens of writing and those of later date, or to show whether or not there is any great divergence in the methods used and the signs employed. There is a visible difference and a very considerable one in the technical treatment of the symbols, and there are some indications of differences in the symbols themselves, but the number of glyphs are too few for satisfactory comparison, and such comparison is made the more difficult by the range of variation in many of the glyphs in contemporaneous inscriptions and the liberties taken in their delineation.

If the meaning which I have suggested for the sculptures on this group of stones be correct, the idea which is expressed would be very obvious. Each sculpture might be regarded as a sort of allegorical representation of the calendar in which the Kins, Uinals, Tuns, and Katuns are portrayed as personages in the act of binding up the years,—in effect making bundles of them; the Cycles being the straps by which they are bound and the Great Cycles being indicated by the principal divisions of the bundle.

BOOK REVIEWS

Zuñi Folk Tales. Recorded and Translated by FRANK HAMILTON CUSHING. New York and London: G. P. Putnam's Sons, 1901. xvii + 474 pp., 8°.

Twenty years have passed since Mr Cushing first read to me, by my fireside at Fort Wingate, New Mexico, his translation of the first story in this book. I called it "The Tale of the Scarlet Feather," but it now appears under the title of "The Trial of Lovers." It resembles the Greek myth of Orpheus; but, to my way of thinking, is superior to the latter. I then urged Mr Cushing to publish it without delay, but the years have passed, and the troubled shade of Tenatsali has gone, itself, to the Zuñian Land of Spirits beneath the western waters, before the tale is told to the world. It is better thus, perhaps, for now no jealous copyright keeps the sad lovers from their worthy leadership. This tale properly begins the book; but many stories that follow are scarcely of less interest.

The legends are of varying degrees of excellence; but all are ingenious, well told, and instructive to the student of folklore and ethnology. I have reason to feel assured that they are all accurately translated. Mr Cushing's knowledge of the Zuñi language was perfect. I have heard him talk for hours to these Indians with ease and eloquence, never hesitating a moment for a word. I have heard him, in delirious sleep, delivering harangues in the Zuñi tongue. He dreamed in it. If the English which he employs seems more exalted than that used by other translators of Indian tales, it is because he knows better the spirit of the Indian tongue and seeks out the proper English equivalents. On the other hand he avoids pretentious eloquence.

Some of these tales are given as they fell from the lips of the Indians, and if the translator were inclined to embellish them he had no time to do so. The late Mrs Mary Hemenway, in the summer and autumn of 1886, had a party of Zuñi Indians spending a season at her summer residence at Manchester-by-the-Sea, Massachusetts. They often recited their tales to her. Mr Cushing translated, and a stenographer took them down as they fell from his lips. I understand that many of the stories in this collection are taken directly from the stenographic reports, with scarcely a change in the wording.

The Indian philosophy which appears in nearly every story and which is often the most difficult part to render in English, forms a marked and most instructive feature of these tales and exhibits in the best light the skill of the translator.

Considering the partly Pueblo origin of the Navahoes and the centuries of intercourse which the people of Zuñi have had with the Navahoes, we should expect many parallels in the folklore of the two tribes, and in this book we find some. The tale of "How the Summer Birds Came" resembles in many particulars a part of the Navaho "Origin Legend." A child of the waters, like the Navaho *To'badzistini*, is the hero. A monster who kicked his victims down a cliff is alike in both; so is the monster antelope, the man-eating eagles, and the Bat Woman who rescues the hero from his perilous predicament. But the feathers which become transmuted into birds are held in the hands of the hero among the Zuñis, while they are in the basket of the Bat Woman among the Navahoes. The story of "The Coyote who Killed the Demon" and that of "The Coyote and the Ravens who Raced their Eyes" have also Navaho counterparts. The Navaho versions lose nothing in comparison with those of Zuñi, and I have reason to suspect that in some cases they are the earlier.

Perhaps the most instructive story in the book is that of "The Cock and the Mouse," since it shows how easily a Zuñi Indian can change an Italian tale to suit his purpose, can clothe it in Indian ideas, furnish it with a typical Indian creation-myth, and add an Indian moral.

There may have appeared somewhere a more meritorious collection of Indian legends than this; but if so, it has never been my good fortune to see it.

There is an appreciative introduction by Major Powell and there are a number of well-chosen illustrations.

WASHINGTON MATTHEWS.

The Tonalamatl of the Aubin Collection: An Old Mexican Picture Manuscript in the Paris National Library. With Introduction and Explanatory Text. By Dr EDUARD SELER. Berlin and London: 1900-1901. ii + 138 pp., 18 folded plates in color. Oblong 4°.

Again has the Duc de Loubat placed Mexican scholars under obligation by bearing the expense of the magnificent facsimile reproduction of this important manuscript. The history of the codex is interesting. It formed a part of the great collection of the Chevalier Boturini and was described by him in his *Idea de una Nueva Historia*, published in

1746; when Boturini's collection was confiscated, this piece passed into the hands of the Mexican government; Leon y Gama, famous, among other things, for his discussion of the meaning of the Aztec calendar stone, seems to have been the next owner, and from him Count Waldeck purchased it and brought it to Europe; Aubin secured it, adding it to his magnificent collection, in which others of Boturini's treasures found a resting-place; finally, M. E. Eugène Goupil bought Aubin's collection and presented it to the French National Library in Paris where it is now preserved.

In 1887 the Museo Nacional of Mexico published these plates in black and white; these were studied by Dr Seler, who read a paper upon them at the Berlin meeting of the Congress of Americanists in 1888. Now, in 1901, we have this truly beautiful facsimile through the generosity of the Duc de Loubat. Dr Seler, who since 1888 has carried his study of the manuscript much further and has had the opportunity of comparing it with documents then inaccessible, was selected to write a new explanatory text.

The manuscript is reproduced with scrupulous fidelity. It consists of a strip of maguey paper measuring $52\frac{1}{2}$ cm. in length and $23\frac{1}{2}$ cm. in width, folded screen-wise into nineteen sheets each $27\frac{1}{2}$ cm. long. The strip is not one single piece, but is made up of thirteen pieces of about equal length, pasted together. Only the inner sides of the sheets are painted upon, and but eighteen out of the possible nineteen surfaces are occupied. Originally there were twenty pages, but the first two have been lost. The order of pages is from right to left, hence what would be with us the final page is really the first of those which remain.

A *tonalamatl* (Aztec: *tonalli*, fate or doom; *amatl*, paper or book) is a book of fate, a divination book of good and evil days. The eighteen pages differ, but their plan of arrangement is uniform. Upon each page the upper left-hand corner is occupied by a large painting, representing a deity and an attendant; the remainder of the page is occupied by fifty-two squares, containing as many small designs. Of these fifty-two designs, thirteen are day-signs with numerals, the days together making up one of the sacred weeks; on the twenty pages the two hundred and sixty days of the ritual year would appear. In the other spaces are figured the heads of the nine Lords of the Night, and the thirteen Gods of the Day hours, as well as thirteen sacred birds. As these various elements do not equal fifty-two, it is plain that the combination on each plate differs from that on every other plate. Each plate begins, at its upper right-hand corner, with a day name combined with the numeral *one*. Between these days, the first in their respective

weeks, and the large painting there is a relation, the latter showing the god and the fortune influencing that week.

Seler, in his explanatory text, studies these elements in detail—the day-signs with associated numerals, the nine Lords of the Night hours, the thirteen Gods of the Day hours, the thirteen birds—attempting their identification and suggesting their meaning. Far the larger part of the text, however, is devoted to a discussion of the large pictures. The identification of the deities, of their attributes, and of their relation to the day-signs heading the weeks, is difficult, and the explanation of their divinatory significance is even more so. Constant comparison is made with the similar designs in analogous codices, and a searching investigation of the writings of Sahagun, Duran, and other early authors is conducted. In this work Dr Seler shows diligence, erudition, and ingenuity. That he is always right, is not to be anticipated; that he sometimes cannot even hazard a suggestion, is to be expected. He has certainly made encouraging progress and laid some sure foundations.

One of the strong features of the work is the series of explanatory tables presented at the close of the discussion. These are skeleton diagrams or analytical keys of the pages. In them the outline of the large picture and the framing lines of the small square spaces are given in red; in each of the squares, in black, is printed the name of the day-sign, of the hour ruler, or of the bird, that occupies it; upon the outline of the large design are marked in black the name of the deity and of the attendant, as well as the names of articles of dress or adornment, attributes, and objects, which are represented. This method, as simple as it is ingenious, makes it possible for the student to catch, at a glance, all the results of the author's investigation.

It is rare that the Mexican student has so satisfactory and helpful a piece of work. Thanks are certainly due to the Duc de Loubat, not only for his generosity in publishing and distributing this reproduction, but also for his enlightened judgment in selecting so competent a student for its elucidation.

FREDERICK STARR.

The Eskimo of Baffin Land and Hudson Bay. By FRANZ BOAS. Bull. Am. Mus. Nat. History, Vol. XVI, Pt. 1. New York: 1901. 370 pp., 4 pl., 172 figs., 8°.

No other savage people on earth are better known than the Eskimo. We have as guides, Holm in eastern Greenland, Rink in western Greenland, a multitude of explorers ending with Peary and Kroeber in Smith sound, Turner in Labrador, Boas and his predecessors in the Baffin land and Hudson bay area; MacFarlane, Ross, and Kennicott about

the Mackenzie mouth; Murdoch for Alaska north of the seventieth parallel; Stoney, Nelson, Dall, Turner, Fischer, and many others in western Alaska.

In 1883 Dr Boas went to Baffin land to study ethnology; the result of that visit is given in the *Sixth Annual Report* of the Bureau of Ethnology. Since his return he has been in communication with Captain Much, at the whaling station of Killerton in Cumberland sound, and has received both manuscripts and collections. The Rev. E. J. Peck has furnished texts and tales from the same area. Captain John O. Spicer furnished information concerning the Eskimo of Hudson strait, and his successor, Captain George Comer, both specimens and manuscript on the natives of Hudson strait and Hudson bay, between Chesterfield inlet and Port Churchill.

With these new resources Dr Boas supplements and corrects in material points the paper in the Bureau of Ethnology report.

The first few pages are devoted to tribal names and statistics, and pages 9-114 to the material culture of Cumberland sound, Southampton island, and the western coast of Hudson bay. The student is here in touch with Eskimo little affected by those things which give their present aspect and characteristics to Greenland or Alaskan utensils and industrial products. The combined and transitional harpoon, the broad throwing-board, the hinged lance, the handrests, eyelets, toggles, and swivels, blood-pins, plugs for wounds, studs and mouthpieces for floats, bird-dart prongs, leisters, nets, knives, gravers, awls, arrow-straighteners, ulus, scrapers, knots, whips, lamps, boxes, and house utensils are rude, suburban, and little sophisticated.

The dress figured reminds one of the ample garments illustrated by the earlier voyagers and among Turner's costumes from Ungava. Southampton island furnishes arrowheads of stone, made-up bows of bone, and arrows with three feathers; and the harpoon heads have stone blades or points. One scarcely knows where to stop admiring.

The last two hundred and fifty pages relate to social organization, customs, religious ideas, traditions, text, and vocabulary.

Dr Boas' conclusions are worth noting. They include the fundamental sameness of all Eskimo culture,—weapons, utensils, implements, clothing, tattooing, as well as customs and beliefs; the number of traditions common to the Alaskan and the eastern Eskimo is quite small. Foreign influence manifests itself in the crooked carving knife, tobacco pipe, three-feathered arrows, etc. The difference in art products between the east and the west is striking; in the east there is little attempt at decoration, in Alaska everything is covered with it. The few etchings that occur among the eastern Eskimo are clearly of recent

origin, being due to European influence; even inlaid patterns are not exceptions. Dr Boas throws the electric light on a puzzle that has perplexed the reviewer some years. The attempt to associate the eastern Eskimo with the French cave-man was confronted with the statement that the Eskimo could not etch or did not until the cave-man's modern representatives gave him tools. Among all the relics from the east there are no etchings. Dr Boas traces this etching tendency to contact with Indians. No doubt the art was made possible by the white man's appliances. This is followed by another acute observation that the eastern Eskimo have retained their ancient characteristics more than the Alaskan. And we would add that the East Greenland Eskimo, in their excessive overlaying, their flat harpoons, and other characters, are nearer still to the Asiatic Amur people.

O. T. MASON.

Notes on the Report of Teobert Maler in the Memoirs of the Peabody Museum, Vol. II, No. 1. By CHARLES P. BOWDITCH. 30 pp., 8°.

This is the title of a brief paper privately printed for the author. It is not a review of Mr Maler's work, but a discussion, in the author's usual convincing style, of the numeral series and calendar dates in the inscriptions discovered by this explorer, chiefly at Piedras Negras. As Mr Bowditch is always careful to distinguish between those interpretations of glyphs in which he has full reliance, and those in regard to which there may be doubt, his conclusions may be accepted with confidence.

He follows Goodman's method of stating series, but introduces a new method of designating the years, surrounding the year number with a circle in the text. (As this is somewhat inconvenient in printing, why not simply insert the word "year," it being understood that Goodman's numbers are referred to?)

One criticism which I would make, is the use of the Maya word *kin* for "day." I see no reason why it would not be as well to use the word "day," which is understood by all readers. Nor do I see any good reason for adopting Seler's suggestion of *uinal* for "month," or the 20-day period, as it was in fact the month of the Maya calendar, notwithstanding Seler's contention to the contrary.

The importance of Mr Bowditch's paper is found in the fact that it clearly demonstrates that the same calendar system was used at Piedras Negras as at Palenque, Copan, Quirigua, and Tikal; and also, if the time series of the inscriptions have any chronological significance, as seems probable, that the structures now in ruins pertain substantially to the same era.

It is to be hoped that further investigation will be made of the ruins of Yucatan in order to discover inscriptions from which the calendar system in that section can be determined with certainty.

CYRUS THOMAS.

Basketry Designs of the Indians of Northern California. By ROLAND B. DIXON. The Huntington California Expedition. Bull. Am. Mus. Nat. History, Vol. xvii, Pt. 1. New York: 1902. 25 pp., 37 pl.

This excellent monograph is devoted to markings on Pomo (Kulanapan), Maidu (Pujunan), Pit River (Palaihnihan), Wintun (Copehan), Moquelumnan, and Yanan basketry, and supplements the author's paper in the *Anthropologist* (N. S., vol. II, pp. 266-276). Three type areas are characterized: *Northwestern*, including Hupa (Athapaskan), Karok (Quoratean), Yurok (Weitspekan), and perhaps Shasta (Sastean); *Northeastern*, including Modoc and Klamath (Lutuamian), Shasta (?), Pit River (Palaihnihan), Yana (?), Wintun (Copehan), and Maidu (Pujunan); *Pomo type*, confined apparently to this family (Kulanapan). The designs of the Wintun are empty spool, leaves strung, deer excrement, "pulled around," stripes, cross waves, arrowpoints, bent elbow, fish-tail, water snake, rattlesnake, wolf's eye, flying geese, bear's foot, skunk's nose, and lizard. Moquelumnan and Maidu designs are eye, quail tip, deer excrement, rattlesnake, and water snake. The Noxi or Yanan gives wolf's eye and house. Pomo designs are arrowpoint, crossing tracks, zigzag, quail tip, fish-net meshes, crow tracks, red mountains, buckeye tree, spotted fawn, grasshopper leg, and leaf. Mr Dixon notices that there are instances in which members of different stocks have similar designs; if all the designs be tabulated without reference to the meanings, there are few coincidences. Only the arrowpoint, linked parallelograms, crossing trails, quail tip, feather, and hourglass figure may be found in all the stocks. There are, also, as might be expected, identities between contiguous stocks. All definitive conclusions as to type areas and relationships must wait for fuller material. Mr Dixon brings into comparison with the Maidu designs a few from the Lake region of Africa to show how they may have arisen independently. The closing portion of the paper discusses the purpose of the basketry designs: partly decorative, partly realistic. Whether the realistic symbols are abstract or concrete in any case is not discussed. The author concludes wisely, in the case of similarities in designs from tribe to tribe, that with simpler ones they may be either original or borrowed, and that with the more complicated the certainty of borrowing increases with identity of numerous details.

O. T. MASON.

Grammatical Fundamentals of the Innuït Language, as Spoken by the Eskimo of the Western Coast of Alaska. By FRANCIS BARNUM, S.J. Boston: Ginn & Co., 1901. xxv + 347 pp., 8°.

Among the aboriginal languages of North America scarcely one is richer in grammatic forms than the Eskimo. In this language but little distinction is made between the noun and the verb; that which we call the verb in Eskimo is inflected like a noun and comes nearest to the participle of Aryan languages, the subject pronoun preceding it being not a predicative but a possessive term. Thus, *tikiḡu-kut*, "we have arrived," in Greenland Eskimo, is literally "our having arrived." From almost every Eskimo noun one or more verbs can be formed by appending verbifying suffixes.

Although spoken throughout a vast territory, the Eskimo dialects do not differ extremely among themselves, although the contrary might be assumed from the great distances which separate them. The syntax is based on the possessive idea and not on the predicative as with us; the subjective and the objective cases (of the direct object) differ but little one from the other, but the cases referring to space (locative) are well defined and numerous, for we have the localis in *-me*, the ablative in *-miḡ*, the vialis or prosecutive in *-kut*, the terminalis in *-mut*, the modalis in *-miḡ*, and the comparative in *-tut*. Besides these cases the nominal inflection has a genitive. All this refers to the Greenland dialect, whereas in the Tununa the case suffixes are somewhat different. Considering that these endings differ for the plural, again for the dual, and again for the transitive or objective form and for the intransitive, it may truly be said that these Eskimo dialects are well provided with cases.

The Tununa dialect of Eskimo, to which the following data refer, is the subject of the work of Father Barnum, who resided as a missionary for eight years on Nelson island, opposite Nunivak, on the eastern or Alaskan coast of Bering sea. Father Barnum uses an alphabet of fifteen vowels, three diphthongs, and seventy-one consonants for the purpose of transcribing the Eskimo, and with four or five exceptions these eighty-nine sounds seem to be readily pronounceable by us. The alphabet is in part Father Barnum's own invention, but he states that he would have used that of the Bureau of American Ethnology had it reached him in time. The consonants do not occur in profusion, and in the spoken sentence they are perfectly balanced by the vowels; therefore this northern dialect is rather soft and smooth, and in every respect is more musical than the Tinné or Athapascan dialects of the Canadian interior; indeed, it is even more pleasing to the ear than English.

To record all the forms of verbal inflection in any Eskimo dialect is a herculean task; but Father Barnum accomplished it, although not entirely to his satisfaction. His list of verbal modes (that is, adverbial or other elements modifying, specializing, or determining the function of the verb and of nouns derived from the verb), is another noteworthy accomplishment. But we become familiar with the very life of the idiom when we read the native stories with their translations and the compiler's commentary where personified animals are introduced. The vocabulary, comprising five thousand or more words, appears in syllabicated form, with the emphasis noted on each vocable.

In Tununa there is no distinction between masculine and feminine gender in the pronoun, noun, or verb. Reduplication of the radical syllable, the great root-builder in other aboriginal American languages, is not known in Tununa, which also does not have any prefixes or infixes to the root, suffixion being the only means of "developing" the radix. Emphasis has a tendency to keep itself in the middle of the longer words, though accentuation of the first syllable is not unusual. The numeral system is quinary-vigesimal.

A. S. GATSCHET.

Notas d'um pai as crianças. BERNADINO MACHADO. Coimbra: Imprensa da Universidade, 1901. 511 pp.

These "Notes of a Father" are written in pleasing style with epigrammatic comments on the adult phenomena corresponding to the facts and fancies of childhood. They are imbued with the true scientific and democratic spirit. The author is professor of anthropology in the University of Coimbra, Portugal, and one of the best known educators and men of science in southern Europe. He has also been a cabinet minister, and his knowledge of political life adds to the wit and wisdom of the book, which is well worth reading for its genial humanity alone, quite apart from its contributions to the study of the child.

ALEXANDER F. CHAMBERLAIN.

PERIODICAL LITERATURE

CONDUCTED BY DR ALEXANDER F. CHAMBERLAIN

GENERAL

Azoulay (Dr) Sur la manière dont a été constituée le musée phonographique de la Société d'Anthropologie. (Bull. et Mém. Soc. d'Anthrop. de Paris, 1901, v^e s., II, 305-320.) Account of the origin and development of the Phonographic Museum of the Anthropological Society, the foundation of which, on the suggestion of Dr Azoulay, was approved May 3, 1900. The difficulties and imperfections of technique are noted. Phonograms of no fewer than 70 languages, dialects, and patois have now been collected. Among the specimens recorded are African war-songs, an Avar recitation from the Koran, the death-wail of the women of Oneled-Nail, the beginning of the Kalevala in Finnish, a Syrian reconciliation-song, etc. These records belong to what Dr Azoulay calls "the higher ethnography."

Gray (J.) Cephalometric instruments and cephalograms. (Journ. Anthropol. Inst., London, 1901, XXXI, 111-115.) General description (with directions how to use) of callipers and cephalographs devised by the author. The first is on the sliding principle; the first kind of cephalograph on the principle of the pitch chain, the second one "in which contact plates are pressed against the head by radial pistons actuated by compressed air." The paper is accompanied by 3 plates and a figure showing the instruments in question and also "cephalograms," or outlines of the contour of the head obtained by them. Says the author of his investigations: "The results, however, show a considerable resemblance between persons of the same people and habitat."

Gy. Der Transport und die Aufrichtung schwerer Körper in vorgeschichtlicher Zeit. (Globus, Birschwag., 1901, LXXX, 192-193.) Brief résumé, with 4 text-

figures, of Watkins' article in the Smithsonian Report for 1898.

Klaatsch (H.) Ueber die Ausprägung der spezifisch menschlichen Merkmale in unserer Vorfahrenreihe. (Corrbl. d. deutschen Ges. f. Anthr., München, 1901, XXXII, 102-108.) The author discusses the upright position; the hand and foot, etc. Among the theses maintained by Dr Klaatsch are the following: The human hand is not the transformed fore-limb of a quadruped, but a primitive inheritance from the common ancestry of man and the mammals; the common ancestry of the mammals and man had a half-erect position;—the majority of the mammals have become quadrupeds; the human foot is distinguished from the primitive form only by a secondary strengthening of the first toe to a great toe; the climbing-mechanism of the ancestor of man, as contrasted with that of the anthropoids, is one for ascending single trees, not for climbing and moving from branch to branch in the thick forest, etc. This paper should be read in connection with that of Schoetensack.

Kohlbrügge (J. H. F.) Gehirnwägungen. (Monatschr. f. Psychiatrie u. Neurol., Berlin, 1901, x, 212-215.) Gives the body-weight, height, brain-weight, proportionate weight of brain to body, of 13 *Semnopithecus* from Java, two *Macaca* from Borneo, two *Semnopithecus* from Borneo, a *Hylodactylus* and an Orang-utang from Borneo, a *Ceropithecus* from Java, a *Sciurus notatus* and a *Tapaja javanica* from Java, and a *Cercus orientalis* from Ceylon. The percentage of brain-weight to body-weight in the *Semnopithecus maurus* varied from 0.6 to 10.5.

Lefebure (E.) L'arc-en-ciel. (Mélusine, Paris, 1901, x, 193-199.) Concluding section of detailed discussion of the rainbow in poetry, dealing with the poets of classical antiquity.

Letourneau (C.) *La femme à travers les âges.* (Rev. de l'École d'Anthr. de Paris, 1901, x, 273-290.) Under the following headings the author discusses the condition of woman past, present, and future: Before woman, the primary class and their influence, the formation of the "feminine" type, female subjection in marriage and the family, woman's mentality, the future of woman. The *Pithecanthropus* ("the first man and the last monkey at one and the same time") was so constituted physically and socially that the labors and duties of the sexes were not greatly divergent, and woman as such did not yet exist. With the development of the clan and the spread of war "the weaker sex" ended by becoming "man's domestic animal." This brought on gradually the development of a real "feminine type," and its reduction to the one career of marriage. Since all but the most primitive times woman has been more or less oppressed and exploited by man,—by turns beast of burden, slave, minor, subject, instrument of pleasure, ignorant companion. But the signs of her future equality with man in education, marriage, the family, society, are abundant and unmistakable. Then a natural equilibrium will be created and together men and women will transform social institutions, without woman becoming less woman, while man will become more human. But there will always be a few "feminine men" and a few "masculine women." But evolution concerns itself with the mutual relations of the men and women of the real sort.

Lovett (E.) The ancient and modern game of astragals. (Folk-Lore, London, 1901, xii, 280-293.) Treats of the game of "knuckle-bones," ancient and modern, the materials used, the rules, terms, names of the game, etc. Details are given of "chuckles," as played in Scotland, knuckle-bone as played in Switzerland, "anobs," as played in Derbyshire, "knuckledowns," as played in Essex, "dabbers," as played in Bucks. The Gujerati game of *socharddo*, played with tamarind seeds, is said to be the nearest Indian analogue of "knuckle-bone." In Switzerland, "we get a king, queen, jack (or knave), and pawns—a remarkable mixture of cards, chess, and astragals," while in Germany are to be found "the most prosaic

and uninteresting machine-made materials for this ancient game."

Lumbroso (A.) Note sul numero 13 (Arch. p. l. Stud. d. Trad. Pop., Palermo, 1901, xx, 46-47.) Brief notes on superstitions concerning the number 13. Cites opinions of Victor Hugo and M. Deschanel, the French parliamentarian.

Mendenhall (T. C.) A mechanical solution of a literary problem. (Pop. Sci. Mo., N. Y., 1901, L8, 47-105.) An attempt to identify authorship by "study of the relative frequencies of the use of words of different lengths," with special reference to the Bacon-Shakespeare "theory." The curves plotted for Shakespeare and Bacon show "extraordinary differences," those for Beaumont and Fletcher resemble closely Shakespeare's, while those of Marlowe are almost the same as his.

von Negelein (J.) Das Pferd in der Volksmedizin. (Globus, Bruchw., 1901, LXXX, 201-204.) General account, with numerous references to literature, of the horse in folk-medicine. Among the topics considered are curative power of the body, head, flesh, milk, excreta, hoof, tail, hair, etc., companionship with the horse, etc. The excreta of the horse have an important rôle in Teutonic folk-thought. Horse-hair also has a wide field of superstition. The skull of the horse is likewise the center of many folk-beliefs.

— Die Reise der Seele ins Jenseits. (Ztschr. d. Ver. f. Volkskunde, Berlin, 1901, xi, 263-271.) This third section treats of "attempts to hinder the return of the soul." Treatment of the corpse, arrangement of the house and contents, obliterating, blocking, etc., the path over which the dead was carried, tying the corpse's feet together, changing the door, carrying the corpse through a hole made in the wall or roof and afterward closed up, are some of the devices employed.

Peet (S. D.) Age and distribution of the monuments. (Amer. Antiq., Chicago, 1901, xxiii, 291-306.) General discussion, with many illustrations, of the monuments of the Stone Age. Kitchen middens, lake-dwellings and crannogs, chambered tombs, chambered cairns, dolmens, are treated of more or less briefly.

Peet (S. D.) Religious influence on ancient art and architecture. (*Ibid.*, 330-351.) Treats in a general way, with illustrations, of Babylonian and Egyptian pyramids, Persian palaces, Phrygian tombs, rock-cut temples, etc., of India and Malaysia.

Poteat (W. L.) Lucretius and the evolution idea. (*Pop. Sci. Mo.*, N. Y., 1901, LX, 166-173.) The author notes among other things Lucretius' "representation of childhood as the first humanizing influence, the origin and growth of language, religious beliefs and social order, the development of industries and of art, until the poet himself appears 'to consign the deeds of men to verse.'"

Ranke (J.) Ueber den Zwischenkiefer. (*Corbl. d. deutschen Ges. f. Anthr.*, München, 1901, XXXI, 90-102.) Discusses, with 11 text figures, the intermaxillary bone and its occurrence in the lower animals, the anthropoids, and man. The conclusion arrived at is that "the double intermaxillary bone belongs to the general structure of the vertebrate (mammalian especially) skulls, but only among the lowest mammals and in man do its elementary components reach a more numerous individualization."

Schuchardt (H.) Sichel und Säge; Sichel und Dolch. (*Globus*, Braunschwg., 1901, LXXX, 181-187, 204-209.) In this interesting and valuable article (with 31 text-figures) Dr. Schuchardt discusses from an archeological and linguistic standpoint the sickle, saw, and dagger in ancient and modern times, their names in the various European languages, etc. As the toothed sickle is related to the saw, so is the smooth sickle to the knife, and the tool passes over into all sorts of sickle-like weapons, from the very curved affair of the Abyssinians to the yataghan. The author considers the family of weapon-names to which English *dagger* belongs to be all derived from Latin *daeva*, "a (Dacian) sword," from whose diminutive *daeculus*, a larger number of Romance words have also sprung.

Starr (F.) Notes upon the mandrake. (*Amer. Antiq.*, Chicago, 1901, XXIII, 259-268.) Treats of superstitions concerning the mandrake and its virtues, its anthropomorphic and sex characters, etc., among the peoples of antiquity, Germans, English, Slavs, Chinese, He-

brews. Today "the center of mandrake superstitions appears to be Asia Minor."

Thomas (A. C.) Mythology: a short presentation of the subject. (*Ibid.*, 316-319.) Among other things the author believes that "the New World myths establish a visit of one or two white men at some very early date, these men coming presumably to teach the Christian religion," and that "there is some connection between the Bible and mythology."

Thorndike (E. L.) The evolution of the human intellect. (*Pop. Sci. Mo.*, N. Y., 1901, LX, 58-65.) Author concludes in this general discussion that man's intellect is "a simple though extended variation from the general animal sort, presaged by the similar variation in the case of the monkeys." The mind of man, therefore, leads among the minds of animals, "not as a demigod from another planet, but as a king from the same race." The mentality of monkeys and children is briefly referred to.

Tissié (P.) La science du geste. (*Rev. Scient.*, Paris, 1901, 4^e S., XVI, 289-300.) Discusses the relations between cerebration and musculation in man, physical education, etc. Dr. Tissié maintains that the "emotion of art," and not the excitement of combat" should be the key-word of physical education, which is not an athletic means but a philosophic end.

Vaschide (N.) et H. Piéron. Le rêve prophétique dans les croyances et les traditions des peuples sauvages. (*Bull. et Mém. Soc. d'Anthr. de Paris*, 1901, 4^e S., II, 194-205.) An attempt at resuming in general fashion our knowledge about the dream in primitive religion and folk-thought, with special reference to its mystical side. Examples of the beliefs of savages in all quarters of the globe are cited. The authors consider that "belief in the prophetic value of dreams inherent in the first manifestations of the human mind is one of the most important factors in the mental condition of the races of man, in the beginning and through the ages."

— Contribution à la sémiologie du rêve. (*Ibid.*, 205-206.) Résumés 13 observations of dreams of children, adults, and aged persons, suffering from

Vaschile—Continued.

inflammatory or infectious troubles of respiration, circulation, etc. No real correlation between gravity of symptoms and acuity of dreams could be made out.

Virchow (R.) Ueber den prähistorischen Menschen und über die Grenzen zwischen Species und Varietät. (Corrbl. d. deutschen Ges. f. Anthr., München, 1901, XXXII, 83-91.) Deals chiefly with the peculiarities of the Neanderthal skull, the craniology of the Ainos, Frisians, etc. Dr Virchow warns against drawing revolutionary conclusions from individual characteristics.

— Die Markhöhle in Mammothknochen. (Ibid., 108.) Brief note on the hollow in the mammoth-bones, which sometimes seems to have been of artificial origin.

Voss (A.) Vorschläge zur prähistorische Kartographie. (Sitzber. d. anthrop. Ges. in Wien, 1900, 197-199.) General proposals for and description of maps of the distribution, material, form, technique, number, etc., of prehistoric remains.

— Fragebogen zur Ermittlung und Beschreibung der noch im Gebrauch befindlichen oder ehemals gebräuchlichen Schiffsfahrzeuge einfacherer Bauart und Einrichtung. (Ibid., 199-202.) Questionnaire on boats of the simplest form now or formerly in use.

Winter (H. L.) The cephalic index. (N. Y. Univ. Bull. Med. Sci., N. Y., 1901, 1, 151-155.) General discussion with results of measurements of 1,594 males over 20 of British descent. Author thinks that "the insane, criminal, and 'neuropathic' tend to be more dolichocephalic than the race from which they spring," and that "comparative dolichocephaly means inferiority, while comparative brachycephaly is the hallmark of mental superiority"; also that there is in process a general evolution toward brachycephaly, all opinions finding large countenance in certain quarters.

Woodruff (C. E.) An anthropological study of the small brain of civilized man and its evolution. (Amer. Journ. Insan., Baltimore, 1901, LVIII, 1-40.) An elaborate and ingenious marshaling (with tables and charts) of palaeontological, archeological, historical, sociological, cultural, somatological, ontogenetic and racial, linguistic and other evidence in favor of the theory that "man's brain developed by the laws of natural selection during hundreds of thousands of years, the 'fittest' variations in each generation being the most intelligent. This process must have ceased in central Europe about 20,000 to 40,000 years ago when the average skull was at its maximum. Since then civilization has made it more and more possible for brains smaller than the average to be as 'fit' for survival as the larger, so that civilization gradually checks further evolution of brain growth and replaces it by greater and greater normal surviving variations. Hence, for the last 20,000 years the average size and weight of the brain have been diminishing, yet variations are getting normally farther from the average, and the longer civilization lasts the more certain it is that we will find larger brains than have ever existed before, and an increasing number of specimens below the average of the present lowest and smallest-skulled races. The change to modern conditions has been, of course, so slow that appreciable differences may have not occurred until the last 2,000 years." Dr Woodruff also holds that man developed in the north where the very slow and gradual approach of the long cold of the glacial period found him a highly intelligent animal, who, as it receded, became a brainy man. Present civilization results from the fact that culture first arose in the south, whither the earliest men migrated from the north and where "evolution took the direction of dependent specialization." Then "the belated bigger and brainier men of the north . . . evolved their own civilization . . . and, when they received some hints from the south, they carried civilization to its present position." Brain made civilization, not civilization brain. In the post-pliocene a rapid evolution of brain took place, and the "missing links" disappeared. Early cessation of the process of natural selection of the brainiest "has been the eternal damnation of the people of southern Asia; they are fixed forever." The earliest to migrate southward were the earliest to develop civilization and the earliest to become "fixed." Hence only the Teutonic and the Mediterranean long-headed races

Woodruff—Continued.

have survived best and developed best—the former now rules the world. Its rule is due to the fact that "it came latest out of the north." It has reaped the advantage of all that its predecessors have done. Modern specialism is the result of selection of variations and not of acquired modifications, and explains many paradoxes in modern life. Variation followed migration from the north, and the rate of movement in these successful migrations must have been very slow, for "rapid migrations are followed by extinction, there being no such process as acclimatization." The lower races are effectually barred out of real competition with the higher.

EUROPE

Amalfi (G.) *Novelluzze raccolte in Tegiano, Prov. di Salerno.* (Arch. p. l. Stud. d. Trad. Pop., Palermo, 1901, xx, 34-45.) Numbers 6-12 of folk-tales from Tegiano in Salerno, with notes and indications of parallels elsewhere.

Anutschin (D. N.) *Ergebnisse der anthropologischen Erforschung Russlands.* (Globus, Braunsch., 1901, lxxx, 249-253, 269-273.) This excellent résumé of the anthropology of Russia is translated from Dr Anutschin's article in the Russian Encyclopedic Dictionary. After a brief historical introduction, the following topics are considered: Racial and other influences upon stature, color of hair and eyes, craniology, Russian and central Asian ethnology, brain-weights, etc. The primitive home of the Slavonic Russians seems to have been in southwestern Russia, and by the time they began the colonization of European and Asiatic Russia they were already heterogeneous anthropologically. The mixture with the Turkic (partly Iranic) and Gothic peoples in the south has had different results from that with the Ugro-Finnish peoples of the north. Both by race-contact and by conditions of environment the differences between the "Great Russians" and the "Little Russians" have been increased. In Siberia the intermixture has reduced the stature, darkened the color, and made more prominent the cheek-bones,—in the Transbaikalian region one can see together pure Russians, pure Buryats and *mixts*. That a considerable varia-

tion in stature is characteristic of the Slavonic peoples (over and above race-mixture) is evident,—the extremes are the "Little Russians" and the Poles. The difference in stature in favor of urban population does not hold for all the large cities (e. g., Warsaw). The recruit measurements for 1874-1885 seem to indicate in European Russia a retrogression in stature, but its exact nature is not yet apparent. In Russia brunetism increases toward the south and east. In early prehistoric times dolichocephaly was the rule in Russia, but a brachycephalic element appears during the Stone Age. Since then the population of Russia has been much mixed with western European, western and central Asiatic elements, both long-heads and short-heads. The studies of the brains of the various races of Russia indicate that the average brain-weight of the Slavonic peoples is somewhat less than that of the non-Slavonic.

Arenaprimo (G.) *Dal giovedì al venerdì santo in Messina.* (Arch. p. l. Stud. d. Trad. Pop., Palermo, 1901, xx, 96-101.) Brief account of the ceremonies of Holy Thursday night in Messina. Besides several briefer songs the text of the *Veronica* song is given.

Bacher (J.) *Von dem deutschen Grenzposten Lusten im wälschen Südtirol.* (Ztschr. d. Ver. f. Volkskunde, Berlin, 1901, xi, 290-296.) This continuation of Bacher's article gives the dialect text and German translation of 7 brief folk-tales.

Bakowski (K.) *O dawnych zabawach cechowych krakowskich.* (Wiśła, Warszawa, 1901, xv, 285-302.) Treats of the amusements formerly in use among the trade-guilds of Cracow, from the 16th century down.

Balladoro (A.) *Impronte maravigliose in Italia.* (Arch. p. l. Stud. d. Trad. Pop., Palermo, 1901, xx, 48-50.) Numbers cxviii-cxxiv of "magic imprints" in various parts of Italy,—devil, blood-stained stones, woman changed to stone, etc.

Berg (R.) *Skolpojks- och studentslang.* (Svenska Landsmålen, Stockholm, 1900, xviii, no. viii, 1-48.) A vocabulary of schoolboys' and students' slang from various parts of Norway and Sweden. It is interesting to meet in this rather

Berg—Continued.

extensive (two columns to the page) word-list the following: "jumbo, nickname for a big, stout teacher (from the elephant jumbo)."

Bericht über die im Jahre 1900 in Österreich durchgeführten Arbeiten. (Sitzber. d. anthrop. Ges. in Wien, 1901, 29-39.) Reports (in brief) on archeological activity in various regions of Austria during 1900, by Straberger (Upper Austria), Petter (Salzburg), Jenny (Vorarlberg), Frankl (Carinthia), de Marchesetti (Trieste and littoral), Hovorka (Dalmatia, etc.), Čermák and Želízko (Bohemia), Raehak and Blansko (Moravia), Kaindl (Bukowina).

Bertholot (M.) Sur une lampe préhistorique trouvée dans la grotte de la Mouthe. (C. R. Acad. d. Sci., Paris, 1901, CXXXIII, 666.) From the examination of the substance coating the inside of the stone lamp discovered by M. Rivière in the prehistoric station of La Mouthe, the author concludes that the material used for lighting was of animal origin, tallow or lard.

Bervi (N. V.) O hrabotka antropologicheskikh nabludenii pri pomostchi teorii vyevoyatnostei. (Russk. Antrop. Zhur., Moskva, 1901, II, No. 1, 41-72.) Treats of the theory of probability in anthropology.

Bloch (A.) L'homme préhistorique d'après Buffon. (Bull. et Mém. Soc. d'Anthrop. de Paris, 1901, v^e s., II, 291-293.) The author cites from Buffon's "Supplément" to his "Natural History," his description of prehistoric man,—the volume in question was published in 1778. Buffon's description relates only to the Stone Age "but tells more about it than the authors who preceded him."

Blümml (E. K.) Vier Pestmittel des XVIII. Jahrhunderts. (Mitth. d. anthrop. Ges. in Wien, 1901, XXX, 223-224.) Brief account, with text of prescriptions, of four remedies against the plague from a medicine-book (MS.) of 1761 preserved in the Museum Francisco-Carolinum at Linz in Upper Austria.

Bolte (J.) Ein dänisches Märchen von Petrus und dem Ursprunge der bösen Weiber. (Ztschr. d. Ver. f. Volkskunde, Berlin, 1901, XI, 252-262.) Discussion, with résumé from a folk-book

of the 17th century, of the source and ramifications of a Danish tale of "the origin of the bad women." The tale is akin to the many satirical stories found in the Orient about the weakness and wickedness of woman and her origin (by transformation, etc.) from the lower animals. In some of the tales Jesus, St Peter, etc., figure as the transformers.

Breuil (H.) See Capitan (L.).

Calliano (G.) Zur Ethnographie des alten nieder-österreichischen Wohnhauses. (Sitzber. d. anthrop. Ges. in Wien, 1900, 205-215.) An interesting account, with 20 text-figures, of the Lower Austrian dwelling-house. The oldest house-forms, material (stone and wood), ornamentation and ornament-motifs, favorite colors, house-inscriptions, old dress, etc., are treated in more or less detail. The oldest form of the house in this region (outside of that revealed by the prehistoric "hut-urns") is a simple, four-cornered wooden structure, which remained the typical one until stone-building was introduced by the Romans (and for a long time after that the stone house was one-roomed). Besides lines and geometric figures the ornamental motifs include figures of sun, moon, stars, heart, clover-leaf, etc. The "gable-man" is also very interesting, as also are the "house marks."

Camelat (M.) Contes d'animaux du Lavedan. (Mélusine, Paris, 1901, X, 211-212, 258-259, 230-233.) Nos. VI-IX of animal-tales from Lavedan.

Capitan (L.) La trouvaille de Frignicourt. (Rev. de l'École d'Anthrop. de Paris, 1901, X, 291-298.) Describes, with 16 text-figures, the finds made at Frignicourt in 1886,—a portion of a female skull, a female humerus, and a male femur; a necklace of shell beads, shell bracelets, perforated pieces of shell, rings of shell, etc.; implements of flint and bone. The author attributes considerable importance to this discovery.

— Les alluvions quaternaires des environs de Paris. (Ibid., 337-350.) Discusses the geology, paleontology, and remains of human manufacture of the quaternary alluvia about Paris. The finds at Levallois, Vitry, Ivry, Chelles, etc., are briefly discussed.

Capitan (L.)# Breuil (H.) Une nouvelle grotte avec parois gravées à l'époque paléolithique. (C. R. Acad. d. Sci., Paris, 1901, CXXXIII, 478-480.) Brief account of the pictographs of the Combarelles grotto near the prehistoric "station" of Eyzies, Dordogne. This article and the next are reprinted in the Rev. de l'École d'Anthr. de Paris (1901, XI, 321-325). In all 64 figures of entire animals were noted, besides 43 heads and a number of other parts. The largest numbers are those of Equidae, Bovidae, and mammoths. The find is very important.

— Une nouvelle grotte avec figures peintes sur les parois à l'époque paléolithique. (Ibid., 493-495.) Brief account of the pictographs of the grotto of Pont-de-Gaume, two kilometers from the cavern of Combarelles. These have neither the energy nor the vigor of the figures of Combarelles. They number some 77, almost all painted. Among them are some figures like those on the pebbles of Maz-d'Aryl.

Carmi (Maria), Il dramma della passione ad Oberammergau. (Arch. p. l. Stud. d. Trad. Pop., Palermo, 1901, XX, 88-95.) Second section of article dealing with the Passion Play at Oberammergau. Deals with the history of the subject. It is worth noting here that Wetstein's bibliography of the Oberammergau Passion Play enumerates some 200 German, 14 English, and 3 French works, all belonging to the 19th century. The great public interest in this Passion Play dates only from 1830.

Chamberlain (A. F.) Domestic animals of the lake-dwellers. (Amer. Antiq., Chicago, 1901, XXIII, 268-270.) Resumes, after Studer etc., the evolution of domestic animals among the lake-dwellers of western Switzerland from the earliest Stone Age to the Roman period.

Colson (O.) La sabbat et les danses. (Wallonia, Liège, 1901, IX, 162-177.) A detailed account of the "sabbath" and dances of the witches according to Belgian folk-thought. Places of meeting, proceedings, incantations, personnel, etc., are considered.

— Décentralisation scientifique. (Ibid., 178-181.) A plea for the encouragement of local research.

— La magie dans la sorcellerie. (Ibid., 190-208.) Treats of magic in witchcraft: magical procedures for injuring or influencing people, magic-books, utilitarian magic, magic tricks, metamorphoses, etc. Very interesting are some of the Walloon folk-expressions.

Conybeare (F. C.) The paganism of the ancient Prussians. (Folk-Lore, London, 1901, XII, 293-302.) Gives the English translation of the Epistle of John Miletina to George Sabine "About the Religion and Sacrifices of the Ancient Prussians," written about 1553, and published in 1582 by Barnardus d'Albinus in his collection of essays "About the religion, sacrifices, wedding and funeral rites of the Russians, Muscovites, and Tartars, by various authors." Treats of harvest-sacrifices, spirit-worship, marriage and treatment of women, funeral meal, etc. The Ruthenian text of a brief drinking song is given at page 300.

Dondou (E.) À propos d'un troglodyte moderne. (Wallonia, Liège, 1901, IX, 134-136.) Brief account of a cavern at Ombret occupied by an old gypsy. The Engis cavern (whence came the famous skull) was formerly known as Trou Cabeur, named, as so many of these caves are, after some temporary inhabitant. The cranium found by the Baron de Loe in 1897 in "the Trou Cabeur at Engis," comes, therefore, from the same place as "the Engis skull."

Ernault (E.) Dictions et proverbes bretons. (Mélusine, Paris, 1901, X, 212-213, 233-235, 259-260.) *Faust-Heritier* of Breton proverbs and proverbial locutions, with explanatory notes, etc.

Fellberg (H. F.) Der böse Blick in nordischer Ueberlieferung. (Ztschr. d. Ver. f. Volkskunde, Berlin, 1901, XI, 304-330.) Details concerning the "evil eye" in Norse tradition. Among the topics considered are: Terms for "evil eye"; possession, acquisition, etc., of "evil eye"; witches and the "evil eye"; look of a dead man's eye; Lapps, Bjarmi, etc.; animals with "evil eye"; imaginary creatures and monsters with "evil eye"; effect of "evil eye" on domestic labors, household works, etc.; effect of "evil eye" on inanimate objects; precautions and devices against the "evil eye"; cures for "evil eye." The author

Fellberg—Continued.

seems inclined to believe that the folk-belief in the "evil eye" has behind it some truth of fact. Cases like Ibsen's "Fruen fra Havet" may have originated such beliefs among primitive peoples.

Gaidox (H.) *Un vieux rite médical.* (Mélanie, Paris, 1901, x, 254-255.) Treats of "passing" a child, etc., through a hole in a tree, a wall, etc. (as a remedy for disease), in various parts of France.

Gebhardt (A.) *Der Name der weissen Frau.* (Globus, Brunschwg., 1901, LXXX, 312-313.) The author seeks to bring the name of "die weisse Frau" into relation with the O. H. G. *weis*, "punishment."

Gerish (W. B.) *A Hertfordshire St George.* (Folk-Lore, London, 1901, XII, 303-307.) Brief account of legends relating to a local dragon-slayer (the story may date, the author thinks, from prehistoric times) said to be commemorated by a monument in the church of Brent Pelham.

Gerjanović-Kramberger (K.) *Der diluvialer Mensch aus Krapiua in Kroatien.* (Sitzber. d. anthrop. Ges. in Wien, 1900, 203.) Brief account of investigations at Krapiua in Croatia in July, 1900. Of the human remains discovered at this paleolithic deposit, the most important were a fragment of the frontal bone, several pieces of the supraorbital ridges, etc., belonging to 10 individuals. The prominent supraorbital ridges the author regards as a general character of "diluvial man," bringing him near to the anthropoids.

Grateful Fréjus. (Folk-Lore, London, 1901, XII, 307-315.) Account from various sources of the stopping of the plague at Fréjus in Provence by St Francis de Paul and the ceremonies still held to celebrate the event by the townspeople.

Grip (E.) *Skuttunge-ock Björklingsmål.* (Svenska Landmål, Stockholm, 1900, xviii, no. III, 1-87.) Dialect texts of 79 brief folktales from Skuttunge parish (Bälinge district) and 19 from the Björklings parish (Norunda district) with literary Swedish text on opposite pages.

H. & E. *Folkminnen.* (Svenska Landmål, Stockholm, 1900, ix, no. 1,

309-371.) Continued from issue of 1899 (5-196). A collection of folk-thoughts and opinions, customs, etc., on various topics,—Freemasons, Tatars, domestic medicines, family advice, etc. The folk-text is given in phonetic transcription with the literary Swedish version on the opposite pages.

Hamy (E. T.) *Les débuts de l'anthropologie en France.* (Rev. Scient., Paris, 4^e s., xvi, 1901, 321-325.) This sketch of the beginnings of anthropology in France treats of the formation of the Société des Observateurs de l'Homme in 1800, its members and their labors till its absorption in the Société Philanthropique in 1803; the Société de l'Afrique Intérieure, whose life was even shorter and simpler; the Société d'Ethnologie, founded in 1839, and extinct after a career of some ten years.

Hauffen (A.) *Das deutsche Spottlied auf die Flucht des Königs Heinrich von Polen.* 1574. (Ztschr. d. Ver. f. Volkskunde, Berlin, 1901, xi, 286-289.) Text (with comments) of the German satiric song on the flight of the Polish King Henry to France in 1574, from a leaflet of about the same year.

Hein (W.) *Ueber einige Fibeln und Nadeln aus Bronze von Velem-St Veit.* (Sitzber. d. anthrop. Ges. in Wien, 1900, 182-189.) Treats, with five text-figures, of two fibulae and three needles of the Hallstatt period from Velem-St Veit, all of which have horse-heads on the end.

— *Ueber Opferkröte.* (Ibid., 1901, 20-22.) Brief discussion, with 4 text-figures, of wax, silver, iron, and lead toads employed as votive offerings in Lower Alsace, Bavaria, etc. These objects are known as "Bürnmütter" and are offered up by women.

Hertel (G.) *Abergläubische Gebräuche aus dem Mittelalter.* (Ztschr. d. Ver. f. Volkskunde, Berlin, 1901, xi, 272-279.) Enumerates from two Magdeburg mss. of the latter part of the 15th century various superstitious practices,—use of consecrated and unconsecrated objects as remedies against diseases, treatment of sick children, ward-charms, horseshoes, seasonal and temporal luck and bad luck, first-doings, findings, crosses, foretelling the future, spirits, etc. The author remarks that,

Hertel—Continued.

in spite of every effort to root them out, many of these superstitious ideas and practices are still in use, so inseparably are they interwoven with the life of the folk.

Hikmet (Dr) et Regnault (F.) Les eunuques de Constantinople. (Bull. et Mém. Soc. d'Anth. de Paris, 1901, v^e s., II, 234-240.) General description of eunuchs and eunuch-making in Constantinople, their social functions, etc. There are said to be some 500-600 negro eunuchs, most of whom come from Nubia and Abyssinia, having been kidnapped in childhood. Formerly there were many Circassian eunuchs. The castration is performed at about 10-12 years of age and 90% are said to die from the operation, but, as a result, the price of eunuchs rises from 200 to 2,000 francs. The article is accompanied by a figure of the skeleton of a Cairo eunuch from the Museum of the Lyons Medical Faculty.

Höfer (P.) Der römische Handel mit Nord-Europa. (Globus, Brunschwg., 1901, LXXX, 265-269.) Brief account, with 7 text-figures, of the old Roman commerce with northern Europe. This trade was in its most flourishing condition from the second to the fourth centuries A.D. The article is mainly concerned with the bronze pails from Hemmoor, lately described by Willers.

Höfer (M.) Kröte als Gebäckmodell. (Ztschr. d. Ver. f. Volkskunde, Berlin, 1901, XI, 340-341.) Brief account, with figure in text, of a tortoise-model (for baking things) from Bavaria.

Ithen (A.) Splitter aus Zuger Volkskunde. (Schweiz. Arch. f. Volkskunde, Zürich, 1901, v, 245-246.) Brief items of folklore from Zug. The resurgence of tattooing is noted.

Kaindl (R. F.) Ruthenische Hochzeitsgebräuche in der Bukowina. (Ztschr. d. Ver. f. Volkskunde, Berlin, 1901, XI, 280-286.) Besides giving the Ruthenian text with German translation of a number of songs belonging to various parts of the wedding ceremonies as performed at the village of Slobodzia Banilla on the lower Czernomoss, the author describes the wedding among the natives of the Huzule village of Pliska,—the Huzules are mountain-Ruthenians.

— Die Juden in der Bukowina. (Globus, Brunschwg., 1901, LXXX, 133-137, 157-161.) General account, with two text-figures, of the Jews in the Austrian province of Bukowina. Origin and population, domestic life, weddings, religion, rabbis as peace-makers, holidays and festivals, judicial procedures, superstitions, etc., are considered, and on page 160 is a list of proverbs with translations into good German, besides a few riddles on page 161. The "jargon" of the Jews of Bukowina has many Ruthenian elements. Roumanian influence is not so great.

Kessler (G.) Spitznamen und Schildbürgergeschichten einiger ostschweizerischer Ortschaften. (Schweiz. Arch. f. Volkskunde, Zürich, 1901, v, 112-115.) Notes on *blason populaire* in eastern Switzerland. Thurstuden, now Sonnenthal, seems to have been most made fun of,—its inhabitants were said to have had one shirt among them, which the first-comer to the fountain where it was hung over-night wore the next day.

Kohl (Dr) Das neuentdeckte Steinzeit-Hockergrabfeld von Flomborn bei Worms: Eine neue Phase der neolithischen Cultur. (Corbl. d. deutschen Ges. f. Anth., München, 1901, XXXII, 91-96.) After some general remarks about the varieties of neolithic pottery and their ornamentation, the author gives an account of the find at Flomborn near Worms, noteworthy as being "the first great connected cemetery of the age of 'Spiralbandkeramik,' graves of this sort hitherto discovered having been sporadic.

Kucz (Marian) Glas czartowski. (Wisla, Warszawa, 1901, XV, 354-356.) Brief account of the "devil's stone" of Wielogóry.

Laborde (J. V.) Association pour l'enseignement des sciences anthropologiques. (Rev. de l'École d'Anth. de Paris, 1901, X, 299-303.) Account of the activity of the Society for the Advancement of Anthropological Teaching in 1899-1900 and 1900-1901. For the period Nov. 1900-April 1901 there were given at the École d'Anthropologie 196 lectures (35 by outsiders), which were attended by 13,560 (women 2,026) persons, an average of 69.2 per

Laborde—*Continued.*

lecture. M. Laborde notes the increasing interest taken by women in anthropological science.

La Mer et les Eaux. (Rev. d. Trad. Pop., Paris, 1901, XVI, 311-320, 361-369, 420-427, 473-484.) Items CLXI-CCLXI of folklore of all sorts relating to the sea and "all that therein is," or is imagined to be therein.

Laville (A.) Couches infra-néolithiques et néolithiques stratifiées dans la vallée de la Seine. (Bull. et Mém. Soc. d'Anthr. de Paris, 1901, V^e s., II, 206-214.) The author believes that he has shown that the two strata called by him "infra-néolithique" correspond to B and C of the Mas d'Azil deposits as delimited by Piette.

— Sépulture mérovingienne à incinération, de Draveil, Seine-et-Oise. (Ibid., 253-259.) Brief account, with 9 text-figures, of a Merovingian incineration-grave discovered at Draveil in October, 1900. Objects of iron, bone, stone, pottery, remains of buildings of Roman origin, etc., were found. Human ashes were not absolutely shown to be present.

— Coupe de la carrière de Saint-Prest, silex taillés. (Ibid., 285-291.) Discussions, with 3 text-figures, the strata in the quarry of Saint-Prest and a flint fragment thought by the author to be of human origin. But this was doubted by M. Verneau, who discussed the paper.

Lavoyer (M.) La veille de Noël en petite Russie. (Bull. Soc. Neuchât. de Géographie, 1901, XIII, 53-54.) Brief account of the "holy night" or Christmas Eve supper among the Little Russians.

— Fête de la bénédiction des eaux à Izoum. (Ibid., 55-57.) Brief description of the ceremony of blessing the water (Jan. 6-19) of the river Donetz.

Ledieu (A.) Le blason populaire du département de la Somme. (Rev. d. Trad. Pop., Paris, 1901, XVI, 433-440.) General discussion of the subject of town and village nicknames in the department of the Somme, their nature, etc. The author has made a large collection of these. The words and phrases which once led to fiercest battles now provoke hardly a shrug of the shoulders.

Lee (Kate) English rhymes. (Folk-Lore, London, 1901, XII, 330-332.) Nine brief satirical rhymes from various parts of England.

Lefèvre (A.) Quelques années du bon vieux temps. (Rev. de l'École d'Anthr. de Paris, 1901, X, 305-320, 351-362.) First part of a study of "the good old days," treating of Louis le Hutin and Philippe le Long and their time, the early part of the fourteenth century. The condition of the people, etc., is briefly discussed. The "lepers" of 1320, the deeds of the Inquisition, etc., are also considered.

Lemoine (J.) Costumes de mariage au pays de Chimay. (Wallonia, Liège, 1901, IX, 221-225.) Brief account of marriage customs of Chimay. The ceremony of the *pâté* or *pîche* is described in particular.

Lewis (A. L.) On the damage recently sustained by Stonehenge. (Man, London, 1901, 24-26.) Brief account, with two text-figures, of the recent fall of a part of Stonehenge.—the last great change occurred in 1797.

Lundell (J. A.) See Noreen (A.).

Maison (P.) Le mariage en Vimcu. (Rev. d. Trad. Pop., Paris, 1901, XVI, 370-376.) Detailed account of marriage customs and ceremonies in Vimcu.

Marchesi (G. B.) In Capitanata: Impressioni di un folklorista. (Arch. p. l. Stud. d. Trad. Pop., Palermo, 1901, XX, 8-27.) Notes of a trip through the mountain villages and towns of Capitanata and the cities of that region with brief references to the folk-life of the populations concerned.

Marcuse (J.) Das Bricquetagegebiet von Vic, Deutsch-Lothringen. (Globus, Braunschwg., 1901, LXXX, 142-144.) The name "bricquetage" is given to masses of oven-baked clay found in heaps in the region of Vic and elsewhere. They are looked upon as "doubtful relics" of the old-salt industry for which this country was renowned.

Matthieu (E.) De la rivalité entre les riverains des fleuves. (Wallonia, Liège, 1901, IX, 230-232.) Notes on the rivalry between the dwellers on the opposite banks of the Sambre, Meuse, Schelde. The people of Namur, *i. g.*, call those on the right bank of the Sambre *Sarrausins*.

Meier (S.) Volkstümliches aus dem Freiland Kelleramt. (Schweiz. Arch. f. Volkskunde, Zürich, 1901, v. 113-125.) This second part of Hr Meier's article treats of pet-names, nicknames, names used by parents in calling or speaking to or of children, and by parents one to the other, etc., by children to or of their parents, etc., in the folk-speech of this region of Switzerland. At pages 117-120 is given a long list of nicknames referring to size, stature, formation and size of bodily organs, color of hair and eyes, gait, and like peculiarities; at pages 121-125 a list of place nicknames—*blason populaire*.

Mitynek (L.) Figarki z soli. (Wiśła, Warszawa, 1901, xv, 341-342.) Brief account of figurines in salt.

de Mortillet (A.) Supports de vase néolithiques. (Rev. de l'École d'Anth. de Paris, 1900, xi, 363-372.) The defective stability of neolithic pottery, due to the conformation of the base, led to the adoption of various expedients (suspending the vessels, or adding to them feet, or hollowed out supports of some sort or other). To use such supports of terra-cotta or stone on which to place the more finely made and rounded vessels, may be regarded as a distinct advance over the ruder flat-bottomed pottery, which stood readily of itself. The article is illustrated by 3 text-pictures of such supports from various parts of France and Switzerland. Some of these supports are of very elegant construction and ornamentation. They seem to deteriorate with the age of bronze.

Musatti (C.) I gridi di Venezia. (Arch. p. l. Stud. d. Trad. Pop., Palermo, 1901, xx, 72-87.) An interesting collection of the street-cries of Venice, with explanatory notes and comments. Venice, the author remarks, is styled "the silent city," because there are no carriages, but other noises there are such as those taken account of here. The cries of fruit and vegetable sellers, vendors of fish and other foods, peddlers of wine and water, milk-vendors, etc., are recorded.

Noreen (A.) och **Lundell (J. A.)** V. K. Bibliotekets visbok i 16:o. (Svenska Landnålen, Stockholm, 1900, app. III, 1, 1-168.) Reproduces the contents of a song-book of the sixteenth century in

the Royal Library. Sixty-six songs are recorded.

Ohr (J.) Przysłowia rabinów. (Wiśła, Warszawa, 1901, xv, 343-354.) Nos. 44-165 of rabbinical proverbs.

Paton (W. R.) Folk-tales from the Eggen. (Folk Lore, London, 1901, xii, 317-325.) Numbers xxiii-xxv from Boudroum,—The Road of Death, Donkey-Skin, The Jealous King.

Paulus (L'Abbé) Die prähistorischen Fundstätten in Lothringen. (Corrbil. d. deutschen Ges. f. Anth., München, 1901, xxxii, 74-78.) This article, which is in French, treats of the various prehistoric finds and "stations" in Lorraine,—the hatchet of Montigny, the important neolithic "station" of Morville (where several hundred flint implements were discovered), the "station" of Delme (where was found the first specimen of neolithic pottery in this region), the megaliths in which the slopes of the Vosges were formerly very rich, the bronze remains of Lessy, Vaudrevanges, etc. (including the rich find at Nidervetz), graves and tumuli (the tumulus-age seems to have been quite prolonged in eastern Lorraine), etc. The oldest relic of man in Lorraine is the hatchet of the Achéul type found in the alluvium of the Moselle at Montigny. During the neolithic period the population on river-platons was quite dense. The exploitation of iron-ore is pre-Roman.

Pitré (G.) Di una Sacra Rappresentazione in Monreale nel 1793. (Arch. p. l. Stud. d. Trad. Pop., Palermo, 1901, xx, 3-7.) Brief account of the celebration of "The Triumph of the Cross" at Monreale in September, 1793, according to the report of a traveler published in 1817.

Quignon (G. H.) Vieux usages de la semaine sainte. (Rev. d. Trad. Pop., Paris, 1901, xvi, 428-431.) Abstract of paper on ancient usages of Holy Week in northern France.

Raccuglia (S.) Proverbi e modi proverbiali riguardanti persone e paesi di Sicilia. (Arch. p. l. Stud. d. Trad. Pop., Palermo, 1901, xx, 28-31.) Numbers 45-61 of proverbs relating to Sicilian persons and places, with explanatory notes.

Radliński (L.) Apokryfy judaizyczne Chrzescijańskie. (Wista, Warszawa, 1901, xv, 303-316.) This section of Radliński's article on Judæo-Christian Apocrypha treats of "Pastor Hermas," "Testament of the XII Patriarchs," "Apocalypses of the Apostles," etc.

Regnault (F.) *See* Hikmet (*Dr.*).

Reissenberger (K.) Zu dem Volksliede von der Tochter des Kommandanten zu Grosswardein. (Ztschr. d. Ver. f. Volkskunde, Berlin, 1901, xi, 298-304.) The author seeks to show that this German folk-song is a variant or outlier of the legend of Monk Felix.

Retzius (G.) Sur l'enquête anthropologique en Suède. (Bull. et Mém. Soc. d'Anthrop. de Paris, 1901, v^e s., ii, 303-305.) Résumés briefly the results of the anthropological (stature, height sitting, finger-reach, length and breadth of head, form of face, color of hair and eyes) investigation of 45,000 Swedish soldiers (21 years of age), carried out in 1897-1898 through the initiative of the Swedish Anthropological and Geographical Society. The average stature is 170.88 cm. (with 50.2% of tall individuals, i. e. 170 cm. and above; the proportion of dolichocephals is 87% (i. e. with index up to 80) for the whole country, with variations in diverse regions (the highest percentage of brachycephaly is 20.98 for Upland,—there has been immigration here of Walloons from Belgium), and the average cephalic index is 75.9; as to hair 75.3% are blonds, 22.4% brunettes, while 2.3% have red hair; of the eyes 66.7% are light, 4.5% dark, 28.8% mixed. Brachycephaly increases both in the south and in the north.

Rivière (E.) Sur les dessins gravés et peints à l'époque paléolithique sur les parois de la grotte de la Vache, Dordogne. (C. R. Acad. d. Sci., Paris, 1901, CXXIII, 505-507.) Résumé of the article following.

— Les dessins gravés et peints de la grotte de la Vache, Dordogne. (Rev. Scientif., Paris, 1901, 4^e s., xvi, 492-498.) Describes, with 5 text-figures, the pictographs of the cavern of la Vache in the Dordogne. Excellent figures of the mammoth, goat, horse, bison, reindeer, etc., are here inscribed. Some of the pictographs are executed with much skill and detail, some are rubbed over with ochre, others are

merely rude scratches. The animals are all in profile. A figure of a bird (duck?), and another of a hut were also noticed. The last is said to "resemble the huts of the charcoal-burners in the forests today."

Rolland (E.) La formulette de la sève. (Mélusine, Paris, 1901, x, 204-211.) Cites, from various parts of France, 52 versions of the rhyme used by children, when loosening the bark in making their willow whistles, etc. The dialect texts are given.

— Formulettes de la primèvere. (Ibid., 228-230.) Cites 14 items of rhyme and superstition concerning the "faire danser les demoiselles," as a certain children's game is called, which consists in making stand upright in a glass of water, or in saliva on the hand, the corolla of the primrose.

Rossat (A.) Chants patois jurassiens. (Schweiz. Arch. f. Volkskunde, Zürich, 1901, v, 81-112, 201-227.) Nos. 75-121 of songs (pastorals, love songs, etc.) in the Jura patois with phonetic transcriptions, notes, and indication of music. The comparison of many of these songs with old French folk-songs, and especially with the patois-literature of Montbéliard, shows the close relationship existing between the Jura and Franche-Comté. Of several of the songs a number of versions are given containing many interesting variations.

Rozanov (V. N.) Ginekomastiya. (Russk. Antrop. Zhur., Moskva, 1900, i, no. iv, 21-36.) In this article, which is illustrated by 5 text-figures and accompanied by numerous bibliographical references, the author résumés the chief literature of the subject of gynecomastia and reports his own observations (the anthropometric details of one case are given at page 34). The conclusion arrived at is that gynecomastia is probably due to arrested testicular development.

Rutkowski (L.) Gościecy Papaje w świetle podan sełucheickich. (Wista, Warszawa, 1901, xv, 273-284.) Treats of the "Gościecy Papaj" in the traditions of the nobility.

Sainéan (L.) Les géants et les nains d'après les traditions roumaines et balkaniques. (Rev. d. Trad. Pop., Paris, 1901, xvi, 293-310.) Treats of giants and dwarfs in the folklore of

Saincan—Continued.

the Roumanians and other peoples of the Balkan peninsula. Among the Roumanian names for giant are: *Arup* ("Arah"), *jidov* ("Jew"), *titlar* ("Tatar"), with which may be compared Servian *zid* ("Jew"), Bulgarian *latin* ("Roman"), Bohemian *obr* ("Avar"), French *Sarrasin* ("Saracen"), etc., all terms of ethnic origin. The cannibal giant in Roumania is *erco* (ogre), and his wife *erco*. The Balkan representative of the western ogre is *emsa*. At pages 301-304 the author adds several versions from Balkan peoples (not recorded by Krek) of the tale of the blinded giant. Pages 305-310 are taken up with the consideration of the Roumanian stories of "Little Pepper Grain," or Tom Thumb.

— *Les marionettes en Roumanie et en Turquie*. (Ibid., 400-419.) Account of puppet-shows in Roumania and Turkey. The Roumanian *focl păpușilor* and the Turkish *Karaguzus* are compared.

— *Les fées méchantes*. (Mélusine, Paris, 1901, 2, 217-220, 243-254.) A detailed and interesting account of the *iele* ("they"), or evil fairies, in Roumanian folklore. These creatures are most commonly personifications of the wind or the air, and are often of quite a complex character.

— *Les noms du diable en roumain*. (Ibid., 256-258.) Cites 22 names for the devil in Roumanian, with explanations. These appellations vary from *bală* ("dragon") to *tichlutsă* ("little red caps"). The recollection of the Mongolian invaders of long ago is preserved in *titlar*.

Sakkokia (M.) Animal folk-lore in Georgia. (Man, London, 1901, 36-37.) Superstitions relating to animals from Mingrelia.

Schell (O.) Zwei alte Gerichtsstätten in den Rheinlanden. (Ztschr. d. Ver. f. Volkskunde, Berlin, 1901, XI, 296-298.) Brief description of the "Vehm Linden" at Remlingrade, and at Wildberg.

Schenk (A.) Matériaux pour l'anthropologie des populations primitives de la Suisse. (Bull. Soc. Neuchât. de Géographie, 1901, XIII, 5-52.) Treats,

with details of measurement and description, the osseous remains of neolithic man (4 skeletons and skulls, a cranium, etc.) from Chamblandes, near Lausanne. From the "funeral articles" discovered in the graves the remains at Chamblandes seem to be much older than those at Châtelard and Montagny sur Lutry. Certain points about them suggest a likeness to the remains from Moravia, the region of the Drilester, etc., discussed in 1895-1898 by Zaborowski. The men of Chamblandes seem to have been, not very tall, well-muscled, dolichocephalic, or partly sub-dolichocephalic (the result of mingling of two races?). The face is high and narrow, leptoproscopic. The article is accompanied by 7 figures and 10 plates.

Schliz (A.) Ueber neolithische Besiedelung in Südwestdeutschland. (Corrbl. d. deutschen Ges. f. Anthr., München, 1901, XXXII, 108-112.) Treats in résumé of the neolithic settlement at Grossgartach (described in detail in a monograph published by the author) and related "finds." In pottery ornamentation Grossgartach offers artistic developments from the simple forms of the Danubian region. The article is accompanied by a map showing the distributions of "ribbon pottery," which seems to have flourished in special fashion here.

Schmidt (E.) Die Neanderthalrasse. (Globus, Braunschwg., 1901, LXXX, 217-222.) Critical résumé of the facts about the Neanderthal skull occasioned by the recent extended studies of Schwalbe and Klaatsch. Dr Schmidt concludes that these researches have practically proved the existence of "a diluvial race of man, different in essential respects from the man of today." This Neanderthal-Spy race was much closer to the anthropoid.

Schuchardt (H.) Ueber Basken und Romanen. (Sitzber. d. anthrop. Ges. in Wien, 1901, 40-42.) An interesting discussion of Romance loan-words in Basque. Such words are *makil* (bacillum), *ortoa* (hartón in Spanish Gypsy dialect), *quisalire* (Spanish crisuelo), *arruda* (Bearnese arronde), whence the diminutive *ordats*. Many things thought to be really Basque turn out to have names derived from some one of the neighboring Romance tongues.

Schütte (O.) Das Hänseln im Braunschweigschen. (Ztschr. d. Ver. f. Volkskunde, Berlin, 1901, xi, 332-334.) Brief notes,—with texts of songs used—, on the "Hänseln," or "initiations" (of drinkers chiefly) in Brunswick.

— Braunschweigische Sagen. (Ibid., 338-340.) Seventeen brief items from Brunswick about ghosts, witches, unquiet corpses, "spook-animals," folk-jeats, etc.

Sébillot (P.) Le premier congrès régional des traditions populaires. (Rev. d. Trad. Pop., Paris, 1901, xvi, 281-292.) Brief account of the district folklore Congress held at Abbeville in May, 1901, in accordance with the resolution of the International Congress of 1900.

Smólski (G.) O Kaszubach nadbrzejskich. (Wiśła, Warszawa, 1901, xv, 320-339.) Continuation of account of the Kassubes of the region of Lake Leba.

Speakman (Jean C. G.) Midsummer in the Pyrenees. (Folk Lore, London, 1901, xii, 315-317.) Brief account of the ceremony of the building and burning of the *Brandon* at Bagnères de Luchon in the department of Haute Garonne, a curious survival of sacrifice and a strange combination of Christianity and paganism.

Sperino (G.) L'encefalo dell' anatomo Carlo Giacomini. (Riv. Sperim. di Fren., Reggio, 1901, xxvii, 146-171, 542-581.) Details of examination of the brain of Giacomini, the well-known Italian anatomist, who died in 1898. The *gyrus supramarginalis* of the left hemisphere and the *gyrus angularis* of the right were particularly prominent. But the most noteworthy feature was the presence of a double fissure of Rolando, a peculiarity which Giacomini himself was about the first to describe. Its occurrence in a man of Giacomini's sanity and intellect is a blow to the ultra-Lombrosian school.

Stalin (G.) Curieux disques préhistoriques. (Rev. de l'École d'Anthr. de Paris, 1901, x, 326.) Brief description of ten chalk discs found some years ago at Mooy in the department of Oise. The author thinks they may have been intended for weights.

von Stenin (P.) Die neuen Forschungen über die Bashkiren. (Globus, Braunschwg., 1901, lxxx, 150-157.) Résumés, with 6 text-illustrations, the recent investigations of Nikolsky in particular. Population, physical characters, houses and tents, folk-life, clothing, food, religion, burials, weddings, marriage, birth, education, festivals, musical instruments, agriculture, hunting and fishing are briefly referred to. As to the origin of the Bashkirs, the author agrees with Bogdanoff, that "not only not the last, but not even the first word has been spoken." The "mountain Bashkirs" and the "steppe Bashkirs" differ in certain particulars,—the majority, however, lead a "nomadic life" during the summer, but this "nomadic life" is now becoming largely fictitious. The Bashkirs are great consumers of tea,—"quite often a Bashkir will empty 50 to 60 cups at one meal." The native mollabs are engaged in a campaign against brandy and tobacco. The Bashkirs are Mohammedans, but generally non-fanatical. Polygamy is rare, but divorces are common. The school-attendance, both of boys and girls, is much greater proportionately among the Bashkirs than among the Russians, and the Mohammedan clergy are zealous for education. The attempt of the Russian authorities to force a change to agriculturists in this still nomadic people has, Dr von Stenin thinks, been not at all a success. Plundering wild honey and hunting the wolf are even now more to their taste.

Stoll (O.) Die Erhebungen über Volksmedizin in der Schweiz. (Schweiz. Arch. f. Volkskunde, Zürich, 1901, v, 157-206.) Details for a questionnaire-investigation of Swiss folk-medicine, with introductory remarks and general comments. The investigations are to be carried on under the auspices of the Swiss Folklore Society. The rubrics enumerated by Dr Stoll cover every possible aspect of the subject.

Strobl (J.) Von der diluvialen Fundstelle auf dem Hundsteig in Krems. (Sitzber. d. anthrop. Ges. in Wien, 1901, 42-49.) Describes, with 32 text-figures, the investigations carried on in 1900-1901 at the diluvial "find" on the Hundsteig at Krems, where a considerable body of primitive men appear to have been long settled. Over

Strobl—*Continued.*

12,000 paleolithic artefacts from this place are now in the municipal museum. Some of the stone tools are of careful and fine workmanship.

Szombathy (J.) Der XII. internationale Congress für prähistorische Anthropologie und Archäologie zu Paris, 1900. (Ibid., 1900, 187-197.) Report on the Paris Congress of 1900, with special reference to papers, collections, etc., illustrative of the remains of prehistoric man in France.

— Funde aus einem neu entdeckten vorgeschichtlichen Bergbau im Ender-Sinkwerk am Salzberg bei Hallstatt. (Ibid., 203-205.) Brief accounts of the finds (fragments of clothing, sacks, bones, etc.) in a new prehistoric "mine" in the Hallstatt salt mountain. The Salzberg appears to be remarkably free from evidences of Roman civilization. The cretinism of Hallstatt has diminished, according to a remark of the author, since the workpeople have ceased using old salt-casks to put their little children in during their absence on the Salzberg.

Talko-Gryntsevitich (V. D.) Polyaki. (Russk. Antrop. Zhur., Moskva, 1901, II, no. 1, 1-30.) In this paper, which is illustrated by 14 text-figures of anthropological types, contains many anthropometric data, and is accompanied by a good bibliography (pages 28-30), the author outlines the anthropology of the Poles (history, statistics, physical type, etc.). The mountaineers of Tatra are thought to be the best representatives of the Polish physical type.

Tetzner (F.) Finnisch-ugrische volkskundliche Studien. (Globus, Braunschwg., 1901, LXXX, 233-235.) Chiefly a critical résumé of Krohn's recent study of Finnish "magic songs." Dr Tetzner emphasizes the influence of early Christianity upon the Finno-Ugrian peoples, holding, with Krohn, that the magic poetry of the Finns has not yet been proved to be primitive with them.

Teutsch (J.) Prähistorische Funde aus dem Burzenlande. (Mith. d. Anthrop. Ges. in Wien, 1901, XXX, 189-202.) Gives, with 156 text-figures and one colored plate, the results of the archaeological activities of the author since March, 1897, in the southeastern part of Transylvania, the region immediately adjoining the city of Kronstadt,—the

"Burzenland" as it is called,—in particular. Fragments of pottery, clay-objects, implements of stone and copper, artefacts of bone, figures of animals and human beings, etc., are discussed. The most of the specimens are from the late neolithic settlements around Kronstadt. From the Gesprungberg and the Priesterhügel numbers of "idols" in clay (animal and human figures) were obtained, most of which are of two pieces set together before hardening. The author concludes that the culture represented by the Priesterhügel remains (late Stone age and early Metal period) was considerably influenced by Aegean art.

Thurman (J.) Pargasmålers ljud och formlära. (Svenska Landmålen, Stockholm, 1900, XV, no. 4, 1-175.) Treatise on the phonology and grammatical characteristics of the dialect of Pargas in Finland, a district which in 1898 counted 5,725 people speaking Swedish and 1,576 who used Finnish. The essay was a thesis for Ph.D. at Helsingfors.

Tobler (G.) Der Salzbrannen von Riggisberg. (Schweiz. Arch. f. Volkskunde, Zürich, 1901, v, 228-242.) Historical sketch, with a plethora of notes, of the attempts made in the latter years of the fifteenth and the beginning of the sixteenth century to mine salt on the Riggisberg in the Canton of Bern.

Trotter (A.) Canti popolari Mantovani. (Arch. p. l. Stud. d. Trad. Pop., Palermo, XX, 1901, 64-71.) Gives text of nos. VII-XIV of Mantuan folk-songs, with a few bibliographical notes.

Tuchmann (J.) La fascination. (Médicine, Paris, 1901, x, 201-204, 226-227.) Discusses the laws relating to bewitching, sorcery, etc., from 400 A.D. to 914 A.D. in the various countries of western Europe.

Usi e superstizioni nelle scuole. I. In Russia. (Arch. p. l. Stud. d. Trad. Pop., Palermo, 1901, XX, 32-53.) A few items of superstitious practices in vogue among Russian school-children. Translated from the *Frankfurter Zeitung*.

Vukasovic (V. V.) Vjestice (le streghe) presso gli Slavi meridionali. (Ibid., 102-118.) An account of witches and witchcraft among the southern Slavonic

Vekasovic—Continued.

peoples, Dalmatians, Montenegrins, Servians, etc. The *mera* (or *merina*, incubus of the ancients), the names for witches (and the avoidance of direct naming), witches in folk-poetry, and folk-literature, anti-witch talismans, ceremonies, etc., power and actions of witches, witch-persecutions, are considered. Witches have many epithets among the southern Slavs.

Ward (J.) Five-Wells tumulus, Derbyshire. (Reliquary, London, 1901, VII, 229-242.) Gives an account, with 14 text-figures, of explorations carried on in August, 1890, and October-November, 1900. Mound, galleries, chambers, contents are described. The mound itself was "built of thinly-bedded quarried limestones." The chambers, though of unusual form, have their analogues in the surrounding region. From the accounts of these and previous explorations of this remarkable tumulus of the bronze age, it appears that besides "remains of about 12 persons," calcined human bones (something rare in this district), fragments of pottery, flint implements, etc., were discovered in it. The crania seem to have been typically long-headed. There are proofs also of secondary interments within the mound.

Weinberg (P.) K' voprosu ob ispoln-skom' rostyē. (Russk. Antrop. Zhur., Moskva, 1901, II, NO. 1, 31-40.) Treats, with three text-figures (of the subjects), two cases of gigantism (poly-sarcia) in children,—8 years and 3 months, and 6 years and 10 months old. Their heights are 1,356 and 1,232 mm. respectively, their weights 195 and 160 pounds.

Weinhold (K.) Sagen vom Rubezahl. (Ztschr. d. Ver. f. Volkskunde, Berlin, 1901, XI, 336-337.) Seven brief tales of Rubezahl collected in Bohemia by a German student in 1882.

Wichmann (Dr) Ueber die Verbreitung und Bestimmung der Mare in Lothringen. (Corrbl. d. deutschen Ges. f. Anthr., München, 1901, XXXII, 78.) Brief discussion of the *Mare* (*Mardellen* or *Mertel*), as certain round depressions found in Germany, France, England, etc., are called. The author estimates that 5,000 such exist in the forests of Lorraine. They are thought to be the places upon which the round

huts of the prehistoric inhabitants were once built.

Widossichi (G.) Lettere folkloriche al Dott. G. Pitre. (Arch. p. l. Stud. d. Trad. Pop., Palermo, 1901, XX, 51-59.) This first part of a series of "folklore letters" addressed to Dr Pitre contains the text of 27 brief "canti infantili" from Venetian Istria, with introductory notes and bibliographical references. The author remarks as generally absent in child-poetry the three elements that set folk-songs a-going,—the historical, the esthetic, and the mythical, although the last not infrequently has its last refuge in children's formulae. It may be said "the man no longer understands and forgets, the child does not try to understand and remembers."

Wiercieński (H.) Przyczynek do osiadłości kraju naszego. (Wiśła, Warszawa, 1901, XV, 316-320.) Brief study of the distribution of the population of Poland.

Wilke (Dr) Der "Hobe Stein" von Döben bei Grimma. (Verh. d. Berl. Ges. f. Anthr., 1901, 194-201.) Treats, with two text-figures, of the monolith, or "high stone," of Döben, which, the author is inclined to believe, marks an old cult-locus, such as Tacitus describes,—an Irmensul perhaps.

Wolfram (Dr) Die räumliche Entwicklung von Metz. (Corrbl. d. deutschen Ges. f. Anthr., München, 1901, XXXII, 67-70.) A brief account of the spatial development of the city of Metz, the *Civitas Mediomatricarum* of the Romans, from the earliest times down to the present. Of the old Celtic town no remains are preserved; the Roman wall was pulled down in 1235. In the year 1352 a good part of Metz was razed by Karl V. The favor of the present German Emperor is relied upon for the re-acquisition of what was then lost and never since regained.

— Die Entwicklung der Nationalitäten und der nationalen Grenzen in Lothringen. (Ibid., 78-82.) Discusses the development of nationalities and of national frontiers in Lorraine. The evidence from personal and place names is referred to. The ending *-weiler* is, Dr Wolfram thinks, not to be confused with *-ville*, nor is it an indication of Roman settlement.

Zaborowski (M.) Origines des populations anciennes et actuelles de la Russie méridionale et du Caucase. (Rev. Scientif., Paris, 1901, 4^e s., XIV, 385-393.) Résumé of our knowledge concerning the peoples past and present of southern Russia and the Caucasus, including especially the researches of M. de Baye,—the crania were turned over to M. Zaborowski for particular study. The author holds that the first peopling of southern Russia took place from Europe (central, or north); that the population of that country was always of the blond race indigenous to Europe; that the man of the oldest kurgans of southern Russia, the man of Mentone, and the man of Cro-Magnon had a common ancestry; and that the first introducers of civilization into southern Russia were the Ægeans, relics of whose culture have been found in various parts of this region.

Zeller (G.) Der Nikolausabend am Aberssee im Salzburgerischen. (Ztschr. d. Ver. f. Volkskunde, Berlin, 1901, XI, 334-335.) Brief account of the masking by which St Nicholas eve (Dec. 6) is celebrated in Aberssee valley, Salzburg.

AFRICA

Béguin (E.) De Nalolo au Mosi-catunya. (Bull. Soc. Neuchât. de Géographie, 1901, XIII, 84-98.) The author, who is a missionary among the Marotse, gives an account of a journey in July-August, 1898, from Nalolo to the Victoria Falls on the Zambezi, called by the natives Mosi-catunya. The canoes of the Zambesians and their construction, the physical characters of the negroid population, etc., are briefly touched upon.

Bochs (V.) De Port-Saïd à Aden. (Ibid., 58-83.) These travel-notes contain some items of information about the Arabs, Danakil, Persis, etc.

Campbell (J.) Critical examination of documents relative to the Canary islands, etc. (Trans. Canad. Inst., Toronto, 1901, VII, 29-102.) The author, who is well known by his attempts to discover in the Amerinds the descendants of many European and Asiatic peoples of old-time, advances in this lengthy article the theses that the language of the Canarians was of Celtic stock, that "the larger part of the Peruvian vocabularies are Celtic," that "the

Peruvian Aymaras are the Mexican Olmecs under a larger designation," that "these Celts [of America] came from the Canary islands, where they and Iberians once dwelt side by side, and from which as Olmecs and Toltecs they migrated in company." By an ingenious system of syllabic equivalences Dr Campbell "proves" his case linguistically and is satisfied. An immense amount of energy was wasted on this paper. In the "Transactions and Proceedings of the Royal Society of Canada" (1900, VI, sec. 2, 205-265) the same author had a somewhat similar paper with the title "Mexican Colonies from the Canary Islands traced by Language." To both papers are appended numerous comparative vocabularies.

Chibbaro (L.) Le donne di Tunisi. (Arch. p. l. Stud. d. Trad. Pop., Palermo, 1901, XX, 60-65.) Brief general account of women and their life in Tunis. Moors, negresses, and Jewesses are briefly referred to. The Moorish women are less moral than the Jewish.

Christol (F.) Souvenir d'une excursion à la cascade de la Maletsunyane. (Bull. Soc. Neuchât. de Géogr., 1901, XIII, 136-140.) Brief account of a visit to the Maletsunyan waterfall in Basutoland. Contains some Basuto place-names with explanations.

— Esquisse sur l'art chez les nègres du sud de l'Afrique. (Ibid., 141-147.) The author, a missionary at Hermon, treats briefly of the art of the Bushmen, Congo and Zambesian negroes, etc. A spoon from the Congo, a Zambesian ivory pin with elephants carved at the head, a Haussa axe, an Angolese knife, a wooden pillow, a mat, the figure of a war-galley, etc., are referred to. The article has three pages of illustrations,—one full-page reproducing the colored cave-painting by Bushmen from Manholong. The Basuto, M. Christol thinks, are not such skilful artists as the Congolese or the Barotse of the upper Zambezi.

Gaillard (N.) See Lortet (M.)

Gusckel (L. W.) Ancient Memphis and the necropolis of Sakkara. (Amer. Antiq., Chicago, 1901, XXIII, 323-328.) Account of a visit to the remarkable necropolis of Sakkara near the site of ancient Memphis.

Hugounenq (M.) See Lortet (M.)

Jourdan (M.) La lépre et les léproseries à Madagascar. (Rev. Scientif., Paris, 1901, 4^e s., XVI, 561-565.) A brief account of leprosy and institutions for lepers, past and present, in Madagascar. The French versions of a number of Malagasy proverbs relating to leprosy are given. Among the Hovas the disease is rare.

Liengme (G.) Un potentat Africain: Goungounyane et son règne. (Bull. Soc. Neuchât. de Géogr., 1901, XIII, 99-135.) Treats of the royal residence at Mandlakazi, the private life of King Gungungyan, the coronation, the army and its ceremonies, "war medicine" ceremony, the royal dances called *nkweya*, the *umetele*, or popular assembly, domestic and foreign policy of the king, fall and exile of Gungungyan. An interesting account is given of the "last potentate of South Africa," Gungungyan the Zulu, who since his fall in 1895, has been in exile on the Azores, where he was sent after being shown through the streets of Lisbon in old Roman fashion. The author was medical missionary at Mandlakazi.

Lortet (M.) et Hugounenq (M.) Recherches sur les poissons momifiés de l'ancienne Égypte. (C. R. Acad. d. Sci., Paris, 1901, CXXXIII, 613-616.) Brief account of the mummified fish of the ancient Egyptians. The *Lates niloticus* was a sacred fish, of which at Encheh and other places there was a special cult,—hence in the Græco-Roman period Encheh came to be called *Latepolis*. Some of these fish are well-preserved although now at least 2,500 years old. Substances obtained from the nairon-lakes and a covering of salty earth in which they were encased mummified them.

— et Gaillard (M.) Les oiseaux momifiés de l'ancienne Égypte. (Ibid., 854-856.) Gives results of the examination of more than 1,000 bird-mummies from various parts of ancient Egypt now in the Lyons Museum. Two classes of bird-mummies are noted,—the sacred ibis and birds of prey (of these 38 species are listed). The ibis is mummified singly, the birds of prey sometimes in masses of 20-30 or even 40 together.

Meinhof (C.) Ndalama. (Verh. d. Berl. Ges. f. Anthr., 1901, 192-194.) The author traces the Bantu word *ndalama* or *ndalama*, "money," through Arabic *dirhem* (plur. *dirahim*) to the Greek *δραχμή*. The account of this alleged loan-word is very interesting.

Myers (C. S.) Stories from Upper Egypt. (Folk Lore, London, 1901, XII, 329-330.) Three brief tales from a Copt of Assiut.

Pauli (Dr) Anthropologisches und Ethnographisches aus Kamerun. (Corrbl. d. deutschen Ges. f. Anthr., München, 1901, XXXII, 112-117.) The author, who was the companion of the late Dr Passavant for some 1½ years in the Cameroons, gives the results of his observations of the Duala negroes. Physical characters, hair-dressing, tattooing, child-birth, treatment of children, language, numerals, games, use of tobacco, mental characteristics, occupations, clothing, food, marriage, shamans, funeral ceremonies, dances, festivals, secret societies, etc., are referred to, the first in considerable detail (at page 114 the pelvic measurements of 13 negro women are given,—they were taken in 1884). The numerals 1-10 and a few other words of the language are also given. According to Dr Pauli, the negro child is born quite light, gradually turning to yellow-brown (dark brown on the face) with a reddish tinge. The "impudence" of the negroes, the author thinks, is due to their contact with the whites, and is not native to them.

Pérregaux (E.) La côte d'or comme pays aurifère. (Bull. Soc. Neuchât. de Géogr., 1901, XIII, 148-154.) Contains the translation of an account by a native of gold-mining in the Ashanti country of West Africa. A table of Ashanti weights and their French equivalents is given. For weighing gold the Ashanti negroes use all sorts of curious figures of animals, etc.

Prestage (P.) The kraal family system among the Amandebele. (Folk Lore, London, 1901, XII, 326-329.) A brief article by Father Prestage, which is accompanied by a diagram showing the plan of construction of the leading kraals in Matabeleland and Lobengula. After 18 years' residence among these natives the author comes to the conclusion that "in Matabeleland, then,

Prestage—Continued.

the native, in many instances, enters into marriage as a business speculation, just as the white man engages in and carries on commerce through the medium of money."

Randall-MacIver (D.) A prehistoric cemetery at El Amrah in Egypt. Preliminary report of excavations. (Man, London, 1901, 40-54.) Résumé, with 17 text-figures, of the results of excavations at El Amrah near the site of Abydos. This extensive cemetery ranges from the earliest "new race" period to the beginning of the "late prehistoric." Among the interesting objects found was a clay model of a house. It is possible to see the evolution of the types of early tombs here from the very shallow round grave to the graves with niches walled-off.

Roscoe (J.) Notes on the manners and customs of the Baganda. (Journ. Anthrop. Inst., London, 1901, XXXI, 117-130.) Extracts from letters to Dr J. G. Frazer by Rev. John Roscoe, for many years a missionary in Uganda. Tribal and clan names, birth, baptism, skin-markings, women (sex-relations, marriage, etc.), disease and death, mourning and funerals, death and burial of the king, are among the topics considered. Among the most interesting items is the following: "The men are said to have all the pains, while the women go on with their regular duties, perfectly happy until the time of delivery."

Rütimeyer (L.) Ueber westafrikanische Steinidole. (Int. Arch. f. Ethnogr., Leiden, 1901, XIV, 195-215). Describes, with three plates (18 figures), a collection of stone idols from the hinterland of Sherbro, acquired early in 1901 for the Basel Museum. The figures are found chiefly in a sort of tumulus or hill,—perhaps the site of an ancient fetish-place, for they are said to be modeled after the forms of gods and not after men. At pages 200-202 is given a report by Drs Schmidt and Preiswerk on the mineralogical and petrographic material of the idols, and pages 202-204 are taken up by descriptions of the 18 idols figured in the plates. Dr Rütimeyer seems to favor ancient contact with Egypt as the stimulus for stone-sculpture in West Africa,—these idols probably represent a now extinct culture of negro peoples

who have come under Egyptian influence.

Sharpe (A.) A carved stool and other objects from British East Africa. (Man, London, 1901, 49.) Brief description (with plate) of carved stool, double gong, and perforated stone, of which the first came from the Lunala-Mweru region, the second from Kazembe, the last from the "Mambwe" country. Similar stones have been found at Zim-babwe.

ASIA

Aristov (N. A.) Etnicheskiya otosheniya na Pamiré, etc. (Russk. Antrop. Zhur., Moskva, 1900, I, NO. IV, 1-20.) This section of Aristov's paper on the ethnography of Pamir and the adjacent lands (after ancient Chinese authorities) deals with the period from the Han dynasties to the 10th century A.D. The researches of Wylie, Specht, Hirth, Radloff, Tomaschek, etc., are referred to.

Baelz (E.) Anthropologie der Menschenrassen Ost-Asiens. (Verh. d. Berl. Ges. f. Anthrop., 1901, 202-220, 245-248.) This interesting and valuable paper treats (with 4 text-figures) of the following topics in relation to the peoples of eastern Asia, the Japanese in particular: The Japanese breast-groove (non-rachitic,—due to pressure of clothing, respiratory affections, etc.); the Japanese knee (deformed by "sitting"); effect of the sun's rays on different races and the formation of pigment (pigmentation through heat is reticular and slow, through chemical influences diffuse and more rapid,—the Mongol browns in the sun, the clear-blond European "burns" reddish and blisters); the regrowth of the foetal *lanugo* and the hair-tufts on the back (the Ainos, a very hairy people, preserve the lanugo-hairs longer than other races); abdominal and thoracic breathing-types (Japanese women who wear a tight girdle have thoracic breathing); growth of the sexes at puberty (Japanese girls develop later than *metis*, and children of Europeans in Japan earliest of all); continuance of skull-growth (growth persists till about the fortieth year); head-circumference of the same individual at different ages (little is known about this); correlation between forms of skull and pelvis (for functional

Baels—Continued.

purposes in child-birth a long-headed mother has a long-oval pelvis, etc.); the Röntgen rays in anthropology (the X-rays serve to bring out the distinction between the flesh and the bony outlines of the face and head), the significance of the "supramamma" (a sort of rudimentary mamma), etc.

Basiet (R.) Contes et légendes arabes. (Rev. d. Trad. Pop., Paris, 1901, XVI, 395-396, 457-464.) NOS. DL-DLXXI of brief Arab legends with bibliographical notes.

Bloch (A.) De la transformation d'une race de couleur en une race blanche. (Bull. et Mém. Soc. d'Anthr. de Paris, 1901, V^e s., II, 240-252.) After discussing the terms "black Huns, and white Huns," "black Khazars, and white Khazars," "black Uigurs and white Uigurs," "black Bulgarians," "black Bulgaria," the author comes to the conclusion that "the black Huns, black Khazars, black Hungarians, black Bulgarians are all of the same Turko-Tatar family, and the white Huns, white Khazars, white Hungarians, white Bulgarians, are their respective descendants." The change of skin-color, which Dr Bloch thinks he can show to have occurred, he attributes not to any intermixture of races but to "transformation" pure and simple. But, as was pointed out in the discussion following the paper, the change is not at all proved, quite apart from the doubtful meaning of "black" in the cases cited.

Bodsohn (P. L.) Reise im unabhängigen Sikkim. (Globus, Bruchwg., 1901, LXXX, 253-259.) Describes, with 6 text-figures, the author's travels in independent Sikkim, one of the most interesting Himalayan countries, with brief notes on the country, people, rulers, etc.

Deniker (J.) Les taches congénitales dans la région sacro-lombaire considérées comme caractère de race. (Bull. et Mém. Soc. d'Anthr. de Paris, 1901, V^e s., II, 274-281.) In 1873 Baels noted the occurrence in new-born Japanese children of pigment-spots in the sacro-lumbar region, and in 1893 Sören-Hansen reported them as frequently present in new-born Eskimo. In 1895 Matignon found them in Chinese children, and in 1896 a writer signing him-

self R. M. reported them for several tribes in the interior of the Philippines. Dr Chemin (1899) found them among the Indo-Chinese peoples, and von Buelow (1900) noted their occurrence with the Samoans, and later still ten Kate states that he has confirmed their presence among Javanese, Hawaiians, and Koreans. They are said (without distinct proof) to characterize also the Malagasy of Madagascar. They are not known to occur among the Aino, Tungus, Kalmucks, Mongols, etc. The author suggests that these spots are a mark of the "Indonesian" race, either in its purity, or by admixture. A distribution-map accompanies the paper. In the discussion M. Atgier called attention to lumbar tufts of hair, etc.,—polyommia, as it may be termed.

d'Enjoy (P.) Le pays d'Annam. Note historique et dynastique. (Rev. Scientif., Paris, 1901, 4^e s., XVI, 557-561.) This brief paper consists of an explanatory list of the various names of the country of Annam past and present, and a table of the various dynasties and rulers from prehistoric times down to today, with names and reigns of monarchs where known.

Fawcett (F.) Notes on the Dômba of Jeypur, Vizagapatam district, Madras presidency. (Man, London, 1901, 34-38.) These valuable "notes" embody anthropometric observations of 25 individuals besides discussion of general physical characters, tattooing (with reproduction of designs), and briefer items about names, marriage customs, fertility, religion, taboo, death, etc. The Dômba are "an outcast jungle people," akin to the Pându of the adjoining Khond country.

Fischer (A.) Ueber die Ureinwohner Formosa. (Sitzber. d. anthrop. Ges. in Wien, 1900, 215.) Very brief abstract of illustrated lecture.

Prochot (H.) Le soroban, machine à calculer chinoise. (Rev. Scientif., Paris, 1901, 4^e s., XVI, 303-305.) Brief account, with text-figure, of the soroban, an instrument of the abacus kind, by which the Chinese add, subtract, multiply, divide, and in the case of very learned men, it is said, extract square roots, etc.

van Gennep (A.) Les *waraw*, marques de propriété, des Arabes. (Ibid., 460-464.) An interesting discussion of the

van Gennep—*Continued.*

nam of property-mark of the Bedonko. Each tribe marks with its *nam* ("brand," "seal," "mark") its cattle, cisterns, pastures, paths, etc. Subgroups, too, have their special *nam*. There are simple and composite *nam*s. These property-marks have been thought by some to be pictographic in nature, by others to be modifications of old Himyaritic letters.

Hartmann (M.) *Die Frau im Islam.* (Ztschr. d. Ver. f. Volkskunde, Berlin, 1901, XI, 237-252.) General discussion of the past and present position of women in Islamic countries. Among the topics considered are A'isha (the favorite wife of the Prophet), pre-Islamic condition of woman, woman in the Koran, divorce, repression of personality, influence of Persians, future of woman in Islam. According to Dr Hartmann, the results of Persian influence upon Arabian society were bad, the falseness of relations of all kinds common to Persia bearing hard upon woman. The inferior position of woman in the Orient is by no means altogether the work of Islam. The appearance in 1890 of Kasim Bey Amin's book, "The Freeing of Woman," raised a storm throughout the Islamic world, to which his later volume, "The New Woman," has added, but the Egyptian Minister of the Interior has declared his essential agreement with Kasim Bey's ideas about the improvement of woman's position and her education. Much is to be hoped from this good beginning.

Hubbard (J. M.) Singan, the present capital of the Chinese Empire. (Nat. Geogr. Mag., Washington, 1901, XII, 63-66.) Brief account of the city on the Weiho, which the late Boxer troubles and the European interference made for the fifth time the capital of China.

In Benares zur Zeit der Wasserfeste. (Globus, Braunschwg., 1901, LXXX, 137-142.) Description, with 6 text-illustrations, of the famous water-festivals at Benares, one of the most remarkable religious ceremonials in India.

Knosp (G.) Poetische Wettkämpfe in Annam. (Ibid., 277-279.) The author gives the translation of the "poetical contest" between a maiden and a youth as carried out at the Annamese

Thung-Thu or "children's New Year" festival. The girls begin and challenge the boys, who answer. Most of the verses are prepared beforehand and learned by heart, but sometimes they are extempore.

Kon' (F.) Beremennost, rodi i uchod za rebenkom' i Katchinok. (Russk. Antrop. Zhur., Moskva, 1900, I, NO. 4, 58-61.) Brief account of pregnancy, parturition, etc., among the Katchines of western Siberia.

Krebs (W.) Wan-Goa-Yu-Pu, ein moderner chinesischer Schulatlas. (Globus, Braunschwg., 1901, LXXX, 230-231.) Brief account of a modern Chinese school-atlas, printed at Shanghai.

Kulka (R.) Einige ethnographische Gegenstände aus Ceylon. (Sitzber. d. anthrop. Ges. in Wien, 1900, 197.) Brief notes on three wooden devil-dance masks, several clay vessels, a sword, etc., from Ratnapura, Ceylon. The ornamentation of the clay vessels suggests analogues of the Hallstatt period.

Lehmann (C. F.) Der Tigris-Tunnel. (Ver. d. Berl. Ges. f. Anthr., 1901, 226-244.) Treats, with 4 text-illustrations, of the situation, structure, and exploration of the Tigris tunnel, the Assyrian knowledge of the "source-cave" of the Tigris, and the inscriptions on the rocks, especially those of Shalmanassar II.

Lyle (T. H.) The place of manufacture of celadon ware. (Man, London, 1901, 54-55.) Brief account of the making of celadon ware at the kilns of Sawankalok 200 miles north of Bangkok, Siam.

Mainov (I.) Pomyés russkich se yakutami. (Russk. Antrop. Zhur., Moskva, 1900, I, No. IV, 37-57.) This article (well-provided with tables and illustrated by 4 text-figures) gives the details of the anthropometric investigation of 186 male Russo-Yakut *mells* of various degrees of admixture. From the measurements taken it appears that the Russians surpass the Yakuts in height, length of leg, width of shoulders, size of foot and wrist; while the Yakuts surpass the Russians in length of trunk, length of arm, pelvic breadth, length and width of head, length and width of face. In general the Russo-Yakut *mells* resemble the Russians in height, proportions of body, etc.; while

Mainov—Continued.

in color and facial traits they are nearer the Yakuts. The *metis* seem also to be less brachycephalic than the pure Russians.

Maliev (N.) Vogul (Ibid., II, 80, 1, 73-81.) Brief anthropological and ethnographical account of the Voguls, with two text-figures. At pages 77-78 measurements of a number of skulls (all dolichocephalic) are given.

Morrison (R.) Chinese characteristics. (Open Court, Chicago, 1901, XV, 551-553.) Reprint from Rev. R. Morrison's book *A View of China for Philological Purposes*, which was published in 1817. The editor remarks, "his statement, though made almost a century ago, might have been written yesterday and not a word of it would lose its force." Contempt for the rude instead of fighting it, appeal to reason, and other qualities good and bad are noted.

Piéron (H.) *Se Vaschide (N.)*

Read (C. H.) Relics from Chinese tombs. (Man, London, 1901, 17-18.) Brief account (with plate) of two pottery bowls, a bottle, and a mirror from an early medieval Chinese tomb.

Regnault (J.) La médecine en Indo-Chine. (Rev. Scientif., Paris, 1901, 4^e s., XVI, 742-749.) The native pharmacopœia is rich,—the author has noted and classified more than 450 remedies,—in Indo-China, and the "doctors" are perhaps not to be despised as much as some European writers think. The Chinese doctor seems to be preferred over the Annamite; the natives consult the European or American physician for surgical cases, but not otherwise. A fusion between the Chinese and European pharmacopœias is expected by M. Regnault to take place rather than the complete substitution of one for the other. The author is about to publish a book—*Médecine et pharmacie chez les Chinois et les Annamites*.

Robinson (G. L.) The "high place" at Petra in Edom. (Amer. Antiq., Chicago, 1901, XXIII, 220-241.) Describes, with plans and illustrations, what is said to have been "the chief religious sanctuary of the ancient inhabitants of Edom." According to the author this newly discovered "high

place" at Petra dates from at least 300 B.C., but was evidently only the outward expression of religion long before existing. The sun was probably worshipped there. Situation, pillars, the "fortress," the pool, rock-cut court, approach, altars, etc., are treated of. At pages 276-281 the editor supplements this paper by some remarks on "Rock-cut Sculptures."

Schaffer (F.) Das heutige Cilicien. (Sitzber. d. anthrop. Ges. in Wien, 1901, 31-54.) A brief account of modern Cilicia, its people, religion, etc. The population is exceedingly mixed, each variety of race preserving still its individual peculiarities.

Stenz (G. M.) Zur Pekingers Volkskunde. (Globus, Brunschwg., 1901, LXXX, 273-277.) A brief account of Chinese folk-thought based upon Grube's recent work, and an appeal for the study by Aryan nations of the folk-life of China as the key to understanding her. Domestic life and the customs connected therewith are briefly considered. Everyone who has any inclination to look upon the Chinese as "savages" or "barbarians" should read Grube's valuable and interesting book.

Sumner (W. G.) The Yakuts. (Trans. Anthrop. Inst., London, 1901, XXXI, 65-110.) Abridged from Sieroshevski's *Yakuts*, published in Russian in 1896. Societal and industrial organization, marriage and family, marital usages and status of woman, etc., are discussed with more or less detail. Some later notes by the author and an additional note by Professor Sumner embodying new matter on terms of relationship conclude this interesting and valuable article. The Polish edition of Sieroshevski's work, which appeared in 1900, is entitled *Twelve Years in the Land of the Yakuts*. The Yakuts still number more than 200,000 scattered over a territory two-fifths as large as the U. S. Those in the more southern sections of the country are in many respects more conservative and devoted to archaic customs than those of the north. The shamanism of the Yakuts is particularly interesting,—"*shamanees* have greater might than the men." "*Smiths* stand in a close and peculiar relation to *shamans*." The nomenclature of relationship among the Yakuts is rich and complicated.

Sven Hedin's explorations in Central Asia. (Nat. Geogr. Mag., Washington, 1901, XII, 303-305.) Abstract from the *London Times*. Refers to the Lob Nor ruins.

Sykes (Ella C.) Persian folk-lore. (Folk Lore, London, 1901, XII, 261-280.) Records various items of folk-lore collected during a residence of over two years in Persia. Among the topics are: Rustum and Sohrab, ghoulis, *divs*, *jinns* and *afreets*, luck (dreams, omens, days, birds, animals), evil eye, favorite colors, sanctuaries, medicine (and charms), shrines, place-folklore, games, New Year's Day, Fire-Worshippers, proverbs and saws. There are references to the Baluchis as well as to the Persians proper. Some of the Persian proverbs have an anthropological cast, e. g., "when you are in a room be of the same color as the people in it" (i. e., Do in Rome as the Romans do). One of the Baluchi conditions of sainthood is "never to have robbed the poor." In Persia the stable constitutes a sanctuary. Although the number 13 is unlucky in Persia, the 13th day of all months (except Saffar) is white, or lucky.

Vaschide (N.) et Piéron (H.) La valeur du rêve prophétique dans la conception biblique. (Rev. de Trad. Pop., Paris, 1901, XVI, 345-360.) Discussion of the data in the Hebrew Bible concerning the value of prophetic dreams. The authors conclude that the Hebrews believed generally in the symbolism of dreams, "but the prophets, seeing in them a possible rival, did not think too much of them"—so they came to hate and denounce divination by dreams.

Venkataswami (M. N.) Hindu Rhymes. (Folk Lore, London, 1901, XII, 333-335.) Six brief rhymes in use by children and youth in Secunderabad, Deccan.

Webster (H.) Japan and China: some comparisons. (Nat. Geogr. Mag., Washington, 1901, XII, 69-77.) General discussion of resemblances and differences between the Japanese and Chinese. Architecture, organization of charity, burial practices, war, food, law, morality, position of woman, etc., are briefly considered. The freedom enjoyed by women in Japan, something that seems to have existed from time

immemorial, is one of the most marked differences. Their opinions of war are entirely opposite, also their work in practical philanthropy.

INDONESIA, AUSTRALASIA, POLY- NESIA

Adriani (N.) en Kruyt (A. C.) Ge-klopte boomschors als kleedingstof op Midden-Celebes en hare geografische verspreiding in Indonesië. (Int. Arch. f. Ethnogr., Leiden, 1901, XIV, 139-191.) Valuable and detailed account of beaten-bark clothing in central Celebes and its distribution throughout Indonesia. The article is well furnished with references to the literature of the subject and illustrated with 5 colored plates and 21 figures in the text,—the useful footnotes are the work of Dr Schmeltz who discusses the linguistic relations, etc., of the technical and other words involved in this study.

Balfour (H.) A swan-neck boomerang of unusual form. (Man, London, 1901, 33.) Brief note (with plate) on a boomerang from McArthur river in the Northern Territory of South Australia.

— Three bambu trumpets from Northern Territory, S. Australia. (Ibid., 33-34.) Brief description, with plate. These instruments are of interest as of very limited range,—wind instruments are not numerous among the Australian aborigines.

Chamberlain (A. F.) The origin of the name Manila. (Amer. Antiq., Chicago, 1901, XXIII, 333-334.) Manila is held to be derived from the word *nila* ("indigo-tree") a Sanskrit loan-word in Tagal, and the Tagal prefix *ma-*, the signification, therefore, being "place of indigo-tree." From the same word *nila* comes our *aniline*.

Durands Besuch bei den Webias auf Neukaledonien. (Globe, Hirschwg., 1901, LXXX, 236-242.) Account (with 16 text-illustrations) from *Le Tour du Monde* of Durand's recent visit to the Webias of central New Caledonia. People, houses, implements and weapons, fetish-stones, medicine-men, masks, marriage, fishing, etc., are briefly described. The Webias, who live in a state of independence in their

Durands—Continued.

mountains, are a very primitive people still, little, if any, influenced as yet by the whites. The parents (father in particular) are very fond of their children and caress them a good deal. The hardest work in the fields is done by the men. The women, except when young, are quite ugly. The Webias have a sort of picture-writing on bamboo. The medicine-man has great power among them. The Webias never seem to have fallen upon the use of iron, although the land is very rich in that metal. They are skillful fishermen.

Edge-Partington (J.) Note on the Matuatonga in the Art Gallery, Auckland, New Zealand. (*Man*, London, 1901, 38-40.) Brief account, with 3 text-figures, of "a *matuatonga* or representation of the reproductive powers of nature,"—a stone image in the Grey collection. The material is foreign to New Zealand.

Feathered arrows from Espiritu Santo, New Hebrides. (*Ibid.*, 41.) Brief note. These arrows are said to be "an indigenous production and without any foreign suggestion."

Haddon (A. C.) The omen animals of Sarawak. (*Pop. Sci. Mo.*, N. Y., 1901, LX, 80-88.) Interesting account, largely based on Perham, of the birds and other omen animals among the Dyaks of North Borneo. This omen-animal cult seems indigenous to Borneo.

Kruyt (A. C.) See Adriani (N.)

Langley (S. P.) Diary of a voyage from San Francisco to Tahiti and return, 1901. (*Nat. Geogr. Mag.*, Washington, 1901, XII, 413-429.) This illustrated diary contains notes on the Marquesans and Tahitians, the "himimies" (songs) of the native women, besides an interesting and valuable account (with photographs) of the famous "fire-walk" of Papa-Ito.

Ray (S. H.) Stories from the southern New Hebrides, with introduction and notes. (*Journ. Anthropol. Inst.*, London, 1901, XXXI, 127-153.) Five brief stories from the islands of Tanna, Futuna, and Aniwa, with notes on the names of the chief personages involved.

Schoetensack (O.) Die Bedeutung Australiens für die Heranbildung des Menschen aus einer niederen Form. (*Ztschr. f. Ethnol.*, Berlin, 1901,

XXXIII, 127-154.) An argument for Australia as the environment where the precursor of man changed into man. Geological, zoological, cultural reasons are enumerated. The nature of the country (absence of the endless primitive forest), the presence of plenty of animal food (marsupials, etc.) easily obtained, and the absence of dangerous animals, all were favorable to the development of a higher form than the precursor. The climbing of isolated trees (not the life of the dense forest) had much to do with the making of man. The environment suggested many of the things of earliest culture. The boomerang and throwing-sticks are compared by the author with certain paleolithic objects found at Laugerie-Basse, Mas-d'Azil, etc., which belonged to prehistoric man in France. The absence of the bow and arrow points to its invention after man started to migrate from Australia. Between the art of the Australians and that of primitive man in Europe Dr Schoetensack sees many points of contact. Some of the points brought out by the author are interesting and suggestive, others very doubtful and somewhat imaginative. The paper is illustrated with a map and 11 text-figures.

Starr (F.) The Bernice Pauahi Bishop Museum. (*Amer. Antiqu.*, Chicago, 1901, XXIII, 320-332.) Brief account of the Museum at Honolulu and its work. The plans include Polynesian natural history as well as ethnology. Two series, "Occasional Papers" and "Memoirs," are published. The Museum is a monument to the worthy and accomplished Princess Pauahi.

Thilenius (Dr.) Die Fahrzeuge der Samoaner. (*Globus*, Braunschweig, 1901, LXXX, 167-173.) Detailed account, with 4 text-figures, of the construction, use, etc., of Samoan boats and sailing-vessels. Of boats there are three chief varieties with several intermediate and diverging forms of each. The *amatasi*, a characteristic sailing-vessel, is now extinct. Another sailing-vessel, the *alia*, is an old type and contains most of the general elements of the Polynesian boat. Of the *alia* many varieties exist. By means of *alia* or double-*alia* many of the long inter-archipelago voyages from Samoa have been made. They have been built to carry more than 100 persons, making possible an extensive migration.

Thomson (B.) Note upon the natives of Savage Island, or Niue. (*Journ. Anthropol. Inst., London, 1901, XXXI, 137-145.*) Treats of religion, witchcraft, diseases, medicine, midwifery, abortion, funeral customs, warfare, land, justice, dress. According to the author, "in their industry and energy the Savage Islanders are a great contrast to the other Polynesian races." We learn, however, that since contact with whites "while their industry shows no symptom of abatement, there is a marked deterioration in their morality." Their villages are "the neatest and cleanest in the Pacific." A marked decline in the influence of the mission is also noted with "a consequent recrudescence of heathen superstition." Under English control Niue "promises to be the most contented and prosperous little community in the Pacific."

Woodford (C. M.) Note on tatu-patterns employed in Lord Howe's Island. (*Man, London, 1901, 40.*) Brief note, with front and back views. The patterns were sketched from life, and Mr Woodford remarks they "agree almost exactly with a similar sketch I made fourteen years ago."

AMERICA

Baker (M.) Kodiak not Kadiak. (*Nat. Geogr. Mag., Washington, 1901, XII, 397-398.*) Historical account of the spelling of this name and its pronunciation. — Kodiak.

Beauchamp (W. M.) The good hunter and the Iroquois "medicine." (*Journ. Amer. Folk-Lore, Boston, 1901, XIV, 153-159.*) Treats of a legend concerning the panther who revived the good hunter, mentioned in the "Jesuit Relation" for 1636. Seneca and Tuscarora variants of the story are given with notes on Iroquois "medicine," drinking of "medicine water," etc. The author observes in conclusion: "I do not find the Indian more superstitious on the whole than some of his white neighbors."

Benedict (A. L.) Has the Indian been misjudged? (*Intern. Journ. Ethics, Phila., 1901, XII, 99-113.*) General discussion of the character of the Amerind. Domestic life, occupations, position of woman, etiquette, religion, language, government, war, etc., are

briefly considered. The author rightly concludes that "the aborigines were not in all respects our inferiors."

de Carranza (J.) Arte de la lengua Mexicana. (*An. d. Mus. Nac. Mex., 1901, Gram., II, 109-124, 125-140.*) Continuation of Father Carranza's Mexican grammar. Treats of the conjugation of verbs.

Chamberlain (A. F.) Translation: a study in the transference of folk-thought. (*Journ. Amer. Folk-Lore, Boston, 1901, XIV, 165-171.*) After discussing the etymology of the expression for "translate" in various languages, the author considers with more or less detail "translation words," words changed in meaning, words made up by the missionaries with or without the aid of their converts, etc. The following words from Baraga's "Dictionary of the Otchipwé Language" are treated of: Abide, absolution, Almighty, altar, annunciation, ark, blasphemy, brimstone, Christian, cross, forgive, heaven, hell, Holy Ghost, hymn, marriage, Pope, Sabbath.

Chavero (A.) Manuscrito antiguo en mexicano, inédito. (*An. d. Mus. Nac. de México, 1901, VII, 129-132.*) Concluding part in Nahuatl of anonymous MS. belonging to Chavero's collection.

— La piedra del sol. (*Ibid., 133-136.*) This concluding part of a paper on the "sun stone" treats of the signs *tecpatl*, *quiahuitl*, and *xochitl*.

Dalton (O. M.) Note on a specimen of basket-work from California recently acquired by the British Museum. (*Man, London, 1901, 23-24.*) Brief account, with text-figure, of "a flexible cylindrical basket ascribed to the Umpqua Indians." On one side are human and on the others animal figures. The note also refers to a collection of stone objects from graves in San Luis Obispo and Santa Barbara counties.

Dissette (Mary E.) The future of the Pueblos. (*So. Workman, Hampton, Va., 1901, XXX, 641-645.*) Author argues for compulsory education of Indian children between four and fourteen years of age. This done "the future of the Pueblo Indian will take care of itself." With this should go the encouragement of native industries.

Du Bois (Constance G.) The mythology of the Diegueños. (*Journ. Amer.*

Du Bois—Continued.

Folk-Lore. Boston, 1901, XIV, 181-185.) Four brief tales told by old Cinon Duro, the last chief of the Diegueños, who belong to the Mission Indians of San Diego county, California. The legends recorded are: The Story of the Creation, The Fly at the Council, The Impiety of the Frog, The Fiesta of the Death of Tu-chai-pai (the Maker).

Dubois (W. E. B.) The home of the slave. (So. Workman, Hampton, Va., 1901, XXX, 486-493.) General account, with 7 text-illustrations, of the houses of the American negroes during the period of slavery. The chief sociological characteristics were lack of comfort, hygiene, and thrift, and forced absence of mother and father.

— The home of the country freedman. (Ibid., 535-542.) General description with 6 text-illustrations. The chief characteristics of the country freedman's home are: Poor light, bad air, lack of sanitary appliances, poor weather-protection, crowding, poor food, lack of privacy, lack of beauty. The negro needs, above all, "ideals of home life."

— The home of the village negro. (Ibid., 601-604.) General discussion with statistics.

Early California history. (Land of Sunshine, Los Angeles, 1901, XIV, 486-496; XV, 38-49.) A translation into English of Don Miguel Costanso's account of the expeditions of 1769 and the first European settlements in California. Notes on the Indians, their customs, language, etc., are included. At page 41 are given the numerals 1-10 and a few other words of the Santa Barbara Indians.

Elliott (G. M.) Crime and criminality in the negro race. (So. Workman, Hampton, Va., 1901, XXX, 636-641.) Among the causes cited are unfortunate environments, idleness, intemperance, immorality, illiteracy. The remedies suggested are home-improvement, better pulpit instruction, general education, opening up of more business avenues, business training, industrial education. Negro crime is out of proportion with white crime so far as population is concerned, being much greater.

Folsom (C. M.) Guiding the Indian. (Ibid., 605-610.) Argues for more careful discrimination between the good and the bad in the Indian character, the cultivation of independence, individual teaching, "outing" system, more attention to home-life, etc.

Förstemann (E.) Der Mayagott des Jahresschlusses. (Glohus, Brnschw., 1901, LXXX, 189-192.) Discusses, with 4 text-figures, the *asayerab*, or five end-days of the Maya year and the deity corresponding in the hieroglyphs of the codices, particularly the Dresdenensis. This deity, called *man* ("grandfather"), is represented by an old bald-headed man, sitting or leaning upon a staff.

Frederick (M. C.) Some Indian paintings. (Land of Sunshine, Los Angeles, 1901, XV, 223-227.) Brief account, with three text-illustrations, of the pictures in the "Painted cave," on an old Indian trail near Santa Barbara, Cal. The paintings are in red, white, yellow, and black, and "are as fresh and bright as though recently laid on." Tradition has it that one of these paintings records a treaty between the Santa Barbara and the Santa Ynez Indians. Some may be records of a trading expedition, as Dr W. J. Hoffman, who saw the cave in 1883, thought. Besides human figures these paintings contain "various circular designs, maltese crosses, snake-like markings, parallel lines, a cross-barred pattern, tree-forms, something resembling a centipede, insects, etc."

Freeman (Theresa J.) Early discoveries of the mastodon. (Amer. Antiq., Chicago, 1901, XXIII, 320-321.) Brief account of Letton's discoveries at Big Bone Lick Spring, Kentucky, in 1812-1815.

Giddings (F. H.) A provisional distribution of the population of the United States into psychological classes. (Psychol. Rev., N. Y., 1901, VIII, 337-347.) Discusses, with six tables, the distribution of the population (by nationalities, religions, geographical areas, etc.) among the classes styled by the author *ideo-motor*, *ideo-emotional*, *dogmatic-emotional*, *critical-intellectual*. Professor Giddings thinks "the mental 'mode' of the American people as a whole is *ideo-emotional* to *dogmatic-emotional*," a view confirmed by the classification of the annual output of books.

- Grosvenor (G. H.)** The sex, nativity, and color of the population of the U. S. (*Nat. Geogr. Mag.*, Washington, 1901, XII, 381-389.) Interesting statistical study with many tables and charts. Every 1000 of the population now contains 511.8 boys and men and 488.2 girls and women; also 863 native-born and 137 foreign-born. By race every 1000 contains 1 Japanese, 2 Chinese, 3 Indians, 116 negroes, and 878 whites. The Amerinds show a decrease of 2.5 % from the figures of 1890, which does not prove a very rapid disappearance of the Red Man.
- Guevara (T.)** Historia de la civilización de Araucanía. (An. de la Univ., Santiago de Chile, 1901, CVIII-CIX, 1057-1097; CIX-CX, 123-187, 197-282.) Detailed account of the third general rising of the Indians (and the events from 1610 to the end of the century) and of the fourth and fifth risings in 1723 and 1766.
- Harrington (M. R.)** An Abenaki "witch-story." (*Journ. Amer. Folk-Lore*, Boston, 1901, XIV, 160.) Brief version of cannibal "witch" story told by an Abenaki woman of Lake George, N. Y.
- Harsha (W. J.)** Neath and the white man's bird. (*So. Workman*, Hampton, Va., 1901, XXX, 578-586.) This story contains some Arapaho words, etc.
- Hoffman (C. W.)** Compulsory education from an Indian's standpoint. (*Ibid.*, 622-624.) Plea by an Arickaree Indian, a teacher at Ft Berthold, S. D., in favor of compulsory education.
- von Inama-Sternegg (K. T.)** Der erste amerikanische Census in Cuba und Portorico, 1899. (*Sitzber. der anthrop. Ges. in Wien*, 1901, 56-64.) Brief account and résumé of the results of the American census of Porto Rico in 1899.
- James (G. W.)** The art of Indian basketry. (*So. Workman*, Hampton, Va., 1901, XXX, 439-448.) Treats in a general way, with 8 text-figures, of Hopi, Navaho, Cahuilla, Washo, and Yokuts basketry.
- Laidlaw (G. E.)** Gambling amongst the Crees with small sticks. (*Amer. Antiq.*, Chicago, 1901, XXIII, 275-276.) Brief account of the well-known wand-hiding game as observed near Ft Qu'Appelle in 1882. In this game women take no part. The art of deception is highly developed.
- Lathrop (I. N.)** Prehistoric mines of Lake Superior. (*Ibid.*, 248-258.) General discussion of mines and mining methods of the ancient Indians of the Lake region, with five illustrations showing copper implements, etc. The article is reprinted from the "North-west Magazine" for February, 1901.
- Lewis (T. H.)** The De Soto expedition through Florida. (*Ibid.*, 242-247.) Concluding section with notes on the itinerary from Mahila to Utiamque.
- McGee (W. J.)** The wildcat tribe in North America. Seriland and the Seris. (Land of Sunshine, Los Angeles, 1901, XIV, 364-376, 463-474.) An interesting illustrated account of the Seri Indians of the Gulf of California visited by the author in 1900. His detailed monograph on these Indians is to be found in the 16th Report of the Bureau of American Ethnology.
- Work of the Bureau of American Ethnology. (*Nat. Geogr. Mag.*, Washington, 1901, XII, 369-372.) This brief account of the activities of the Bureau in the study of the Amerinds is reprinted from the "Verhandlungen des VII. Internationalen Geographen-Kongresses in Berlin," 1899.
- Mead (J. R.)** Archeology of Catalina Island. (*Trans. Kans. Acad. Sci.*, Topeka, 1901, XVII, 215-216.) Brief account of Indian remains on this southern Californian island. The town of Avalon, a noted pleasure resort, "is built on an ancient village-site." "Very few stone spears, arrows, and axes appear to have been found on the island (no large game, except foxes, occurring there). Various stories as to the cause of the disappearance of the Santa Catalina Indians are given.
- Meeker (L. L.)** Siouan mythological tales. (*Journ. Amer. Folk-Lore*, Boston, 1901, XIV, 161-165.) Tales of the misadventures and heroic actions of "the four who never die,"—The Monster, Bladder (the most amusing of these characters), Turtle, and Rabbit. Some of these stories may be compared with those of the Naniboju and Winaketchak cycles among the Algonkins. They differ as told to children and to adults, the uninitiated and the initiated, only the last being supposed to know the esoteric and symbolic meanings of some of the characters, etc.

Mooney (J.) Indian shield heraldry. (So. Workman, Hampton, Va., 1901, XXX, 500-504.) Brief account of the symbolism of the shield among the Kiowa. In 1892 only 6 out of 200 shields in existence 30 years ago were still extant, and of these but one is still with the tribe.—three are in the U. S. National Museum. Prophetic and illuminating visions abound in connection with the shields. The "buffalo shield" is said to have originated from the fact that a woman, in fleeing from the enemy, saved herself from a prairie fire by crawling under a dried-up buffalo-skin. The shield was afterward made by her husband under the guidance of the buffalo spirit.

Morice (A. G.) Déné surgery. (Trans. Canad. Inst., Toronto, 1901, VII, 15-27.) A résumé, with one plate (figuring "knives"), of the author's researches concerning surgery among the northern Déné Indians of British Columbia. Bleeding, burning, blistering, treatment of broken limbs, deformities, etc., uterine troubles, child-birth, cataract, etc., are briefly considered. The paper contains many new and interesting facts. Among other things Father Morice notes that "Indian babies are almost always born with a full crop of hair, and more than once with several teeth."

— Who are the Atanas? (Amer. Antiq., Chicago, 1901, XXIII, 307-312.) In this article, which is chiefly a criticism of other writers about the so-called "Atanas," Father Morice comes to the conclusion that "*Atana*, etc., is a Déné word which means 'foreigner, heterogener,' and is used to qualify *all* races which are *not* Déné." The author replies to a recent article on the Atanas by H. Newell Wardle, in respect to the etymologies therein suggested.

Peairs (H. B.) The need of compulsory education for Indians. (So. Workman, Hampton, Va., 1901, XXX, 594-598.) Presents results of *questionnaire* to agents, superintendents, teachers, etc. Author holds that "the keynote to the Indian's character is his religion."

Pittard (E.) Contribution à l'étude anthropologique des Esquimaux du Labrador et de la Baie d'Hudson. (Bull. Soc. Neuchât. de Geogr., 1901, XMI, 158-176.) Gives details of mea-

urements (stature, head, face, mouth, nose, ear) of 8 male and 6 female Eskimo from the eastern coast of Labrador and the shores of Hudson bay, who were in Geneva during the summer of 1900. The height of the men ranged from 1488 mm. to 1618 mm.; of the women, from 1475 mm. to 1612 mm. The cephalic index of the men varied from 73 to 79.31, and of the women, from 73.09 to 77.41; the nasal index, men 67.73-78.43, women 70.58-78.72. The length of the mouth varied from 52 to 67 mm. in men and from 51 to 58 mm. in women. The length-width index of the ear ranged from 52.85 to 63.33 mm. in men, and from 50.70 to 65 mm. in women. The author also gives the measurements of a girl of 15 and a *métisse* (German father, Eskimo mother) of 7 years of age, whose cephalic indices are 81.81 and 84.33 respectively. Not all the Eskimo of this region are pure in race.

Quimby (L. W.) Among the Skokomish Indians. (So. Workman, Hampton, Va., 1901, XXX, 511-513.) Notes on occupations, funerals, weddings, etc., among the Skokomish of Puget sound. Says the author, "Not a boat plies the Sound that has not its Indian employes. At all of the mills we see them at work." During the salmon-run one Indian often makes \$100 and sometimes \$300 a week.

Ramirez (J. F.) Apuntes de la cronologia de Sabagún. (An. d. Mus. Nac. de México, 1901, VII, 157-160, 161-166.) Continuation and conclusion of Ramirez' study (from an unpublished ms. in the Chavero collection) of Sabagún's chronology. Calendar, feasts, festivals, superstitions, and practices about lucky and unlucky days, etc., are recorded.

— Cronologia de Boturini. (Ibid., 167-194.) From unpublished ms. in Chavero collection. Treats of origin of calendar, seasons, and cardinal points (symbolism, deities, etc.), formation and correction of calendar, division of time into days, months, and years, periods and their symbolism. Pages 183-194 are occupied by extracts from Boturini's "Historia General," dealing in detail with Nahuá chronology.

— Estudio sobre las particularas Nahuas. (Ibid., 195-196.) From unpublished ms. in Chavero collection. Deals with a *to act*.

Roe (W. C.) An Indian art. (So. Workman, Hampton, Va., 1901, xxx, 531-534.) According to the author, who is a missionary at Colony, Oklahoma, it may be said of the Cheyenne and Arapaho of Oklahoma that "only one Indian art worthy of the name remains to them, and that is their bead-work"; and this of late years has degenerated. A few notes on pictographic and symbolic ornament are given.

Rogers (F. K.) An all-round mechanical training for Indians. (Ibid., 459-461.) Author thinks specialization should be rare, and emphasizes too much the old-fashioned "all-round" idea.

Sapper (K.) Speise und Trank der Kekchi Indianer. (Globus, Brunschwg., 1901, lxxx, 259-263.) Detailed account of the food and drink of the Kekchi Indians of Guatemala, with the native name of the various materials. The greater part of the article is concerned with maize and its various products, including *chicha* and other liquors. The vegetables and fruits in use as food and the other native liquors are briefly referred to. The Kekchi boil but never roast turkeys. The pre-Columbian cacao is now being more and more driven out of use by coffee.

Schulze (F.) Die erste ethnographische Skizze über die Botokuden in deutscher Sprache. (Ibid., 232-243.) The author cites passages from Buchamer's translation (published in 1508) of an Italian rendering of the Portuguese account of the voyage of Cabral, in which the Botocudos of Brazil are referred to. The Portuguese explorer, who saw them in 1500, characterized them as merry, peaceable, kindly savages,—such were they before contact with the culture of Europe.

Scoville (Annie B.) Ogalala day-schools. (So. Workman, Hampton, Va., 1901, xxx, 646-649.) Brief notes on Indian schools "among the hostiles," "down in the sand hills," etc. The author informs us that the stronghold of all that fights against civilization is the "Omaha" dance-house,—"this Indian 'Omaha' is school and church, the center of social and public life for the pagan party."

Seler (E.) Die Cedra-Holzplatten von Tikal im Museum zu Basel. (Ztsch.

f. Ethnol., Berlin, 1901, xxxiii, 101-126.) More or less detailed account, with 27 text-figures, of the wooden (*cedrela*?) plates from Tikal in the Basel Museum, and the hieroglyphs inscribed upon them. The development of the sign for "eye" is considered in particular. The signs on the Tikal plates are compared with those at Palenque, Copan, etc. These carvings are among the most perfect specimens of Mayan art.

— Zwei hervorragende Stücke der alt-mexikanischen Sammlung der Christy Collection in London. (Globus, Brunschwg., 1901, lxxx, 223-226.) Treats, with 8 text-figures, of Humboldt's "Aztec priestess," and a stone mask of the god Xipe now in the Christy collection (London). The former, Dr Seler thinks, is a representation of Chalchiuhtlicue, the goddess of water. A great center of worship of the vegetation-god Xipe, was at Teotitlan del Camino, whence, perhaps, this mask was obtained.

Steiner (R.) Observations on the practice of conjuring in Georgia. (Journ. Amer. Folk-Lore, Boston, 1901, xiv, 173-180.) Among the topics treated of are: Witches, how "conjer" doctors get patients, "conjurers," etc. Pages 177-180 are occupied by "items relating to 'conjer.'" At page 172 the same author has a note on "Seeking Jesus," a religious rite of negroes in Georgia.

Wardle (H. N.) Die Eskimos und die Schraube. (Globus, Brunschwg., 1901, lxxx, 226-227.) Discusses, with three text-figures, the origin of the screw-form spear-shafts, etc., of the Eskimo, about which, in previous numbers of *Globus*, v. Buchwald, v. den Steinen, Krause, etc., had written. The author believes that much can be said in favor of the independent discovery of the screw-principle by the Eskimo. The fact that all their known "screws" are "lefts" may be explained by their "having had centuries before the coming of the white man (and the possibilities of subsequent acculturation) every day beneath their eyes a marked example of a 'left' screw—viz, the horn of the narwhal."

Wintemberg (W. J.) Drills and drilling methods of the Canadian Indians. (Reliquary, London, 1901, viii,

Wintenberg—*Continued.*

262-266.) Treats briefly, with 22 text-figures, of pump-drills, stemmed drills, double-pointed drills, etc., in use among the Indians of Ontario.

Woodward (C. W.) What shall be taught in an Indian school? (So. Workman, Hampton, Va., 1901, xxx, 429-435.) General discussion. Author holds that "the school and all that it contains must be within the circle of Indian sympathies," and the training "of such a simple and practical character as to win the approval of the Indian people." Moreover "the course of

study, text-books, and manual features of the schools of Boston or Detroit are out of place in an Indian community." The inspiration of Indian life and the virtues of Indian character should be the core of text-books for the Indian. Education of the child should take place among its own people and not away from them.

Želizko (J. V.) Einige weitere Nachträge zur Geophagie. (Sitzber. d. anthrop. Ges. in Wien, 1900, 305.) Notes on the occurrence of earth-eating among the Otomacs of Venezuela and the half-breeds in the region of Urbana.

ANTHROPOLOGIC MISCELLANEA

Indian Words, Personal Names, and Place-names in New Jersey.—In the *New Jersey Archives*, vol. xxi, recently published by the State of New Jersey, and consisting of abstracts of the official records of New Jersey, principally relating to land transfers prior to 1703, special pains have been taken to give every Indian personal name and place-name found in the records. The result is that 142 Indian land-owners and 237 places having Indian names are mentioned. Quite a number of the place-names are evidently personal names. In many cases the Indian place-names are followed in the records by English interpretations. Many English place-names, such as "The Roundabout," "The Turnabout," and the like, are evidently translations of the Indian appellations. These lists of 379 personal and place-names (which are grouped together under two heads in the index to the volume) must be helpful in the study of the Lenape dialect of the Algonquian language, and are worthy of being reproduced. In the writer's *Indians of New Jersey* an attempt has been made to interpret about fifty local Indian place-names in northern New Jersey; there is also given an officially correct transcription of the "Indian Interpreter," a list of 267 Indian words and phrases, with their translations, as entered in the Salem (N. J.) Town Records in 1684; and in the index to the same work there are listed 261 Indian words and phrases in use in New Jersey.

In the following list of Indian personal names I have added a large number that were omitted by the person who made the transcripts for the volume of the *New Jersey Archives* noted above, and have made additions from other sources. Thus, the list foots up 288 names. But about 35 of these are evidently different forms of writing the same name. There are left about 250 different names of Indians of New Jersey prior to about 1710. They are arranged here in alphabetical order, for convenience of reference and comparison. The figures immediately after most of the names indicate the page in volume xxi of the *Archives* where the name may be found in print. Other printed sources are indicated in other cases. Where no reference is given, the names have been taken directly from the records in the office of the Secretary of State at Trenton. Where the dates are prior to 1665 it may be safely inferred that the scriveners who wrote the deeds were

Dutch, and the pronunciation of the names accordingly should be after the Dutch manner. In many cases where deeds were given for lands in Monmouth, Middlesex, and Somerset counties, the writers were also probably Dutch. The name of Ockanickon, a famous old Indian of Burlington, who died about 1690, and is buried in Friends' Burying Ground at Burlington, appears as a part of several names in this list. Of course liberal allowance has to be made for the difficulty the first scribes experienced in reducing to writing the names of the Indian landowners, for the errors of the clerks who recorded the deeds, and for the troubles of the latest transcribers in interpreting the often almost indecipherable writing in the records. On the whole, however, this list is an approximately accurate record of the names of the Indians in question. I hope those who are competent will attempt a translation of these names, which will no doubt be suggestive and valuable.

- ABOZAWELAMUD, 66. Indian deed, Aug. 22, 1681. With eleven other "Indian proprietors," for a tract on Mattawang or Millstone river, extending to Panetsake, opposite Staten island.
- ACKTOAUW (Winfield gives his name as Kikitoauw) and Alarow, Virginians, "inhabitants and joint owners," for themselves and three other proprietors. Indian deed, Nov. 22, 1630, for Ahasimus and the peninsula Aressick (Jersey City).—Winfield, *Hist. Hudson County*, 15; *N. Y. Col. Docs.*, xiii, 2; *Indians of N. J.*, 102.
- ARTAHKONES, 395. Indian deed, Oct. 10, 1677. With five other "Indian sackamackers," for land at falls of the Delaware (Trenton).
- ALLOWAYES, 559. Indian deed, Nov. 7, 1675. With six others (Indians), for tract of land on Game or florcus creek, Delaware river, Canahockinck creek, adjoining the land of Chohanick.
- ANAREN, 7. Indian deed, July 20, 1668. With five other Indians, for tract called Meghgecock, between Hackingsack and Pissawack rivers (New Barbadoes Neck).
- APAHO (a witness), 440. Indian deed, June 9, 1683. See MANHAUXETT.
- APAUO, 424. Indian deed, April 30, 1688. See SAKAMOV.
- APINAMOUNG. Indian deed, Nov. 18, 1709. See SHERIKHAM.
- APPAMANKAUGH, 2. Indian deed, Dec. 26, 1657. Mattano and Appamankaugh, for land west of the mouth of Raritan river.
- APPRINGUES, 395. Indian deed, Oct. 10, 1677. See ARTAHKONES.
- ABOOKHIKAN, AKACKQUAACKIN, 17. Indian deed, May 19, 1671. See ASSOWAKON.
- ARROMEAUW and two others, "inhabitants and joint owners." Indian deed, July 12, 1630, for Hoboken Hacking (Hoboken and vicinity).—Winfield, *Hist. Hudson County*, 13; *N. Y. Col. Docs.*, xiii, 1; *Indians of N. J.*, 102.
- AREORICKAN and two others. Indian deed, April 9, 1679, for the Saddle River tract.—*Indians of N. J.*, 110.
- ASSEMAMAM, OSHEMAMAM, alias John, 424. Indian deed, April 30, 1688. See SAKAMOV.
- ASSOWAKON, "sachem of Tappan," and ten others, on behalf of Sesnigham, Whipsis, Sewapierincom, and Onrag, owners; thirteen others are named, apparently as witnesses, 17. Indian deed, May 19, 1671; land at Haverstraw, "reaching inland to Metassis creek and Hackensack river."
- ATTAHISHA (a witness), 440. Indian deed, June 9, 1683. See MANHAUXETT.
- AUSPEKAN and two others, "of Nolletquesset or Shark river," 168. Indian deed, July 25, 1689, for tract "between the Pine bridge and Shark river in Monmouth county going west of Pequandlenoyock hill."
- AWEHAM, 560. Indian deed, Dec. 12, 1699. See COTTENOCHQUE.
- AWIHEHON (a witness), 440. Indian deed, June 9, 1683. See MANHAUXETT.

- AWISHAM, "alias Captain John," 639. Indian deed, June 16, 1703, for tract "on the main branch of Salem creek and Hugh Hutchings' run," etc.
- AYAMANUGH (a squaw), in Indian deed, May 19, 1710. See MEMERESKUM.
- BARRENACH, agreement, Dec. —, 1663. See MATANOO.
- BAWAGTOONS (a witness), 17. Indian deed, May 19, 1671. See ASSOWAKON.
- BOMOKAN, 1. Indian deed, Jan. 10, 1628; with seven other Indians, for land on the west side of North river, from Wichacken to Constable's Hoeck.
- CACANAKQUE, in Indian deed, 1667. See WAFAMUCK.
- CAMGINS (Winfield gives it as Canwins, which is improbable). Indian deed, Nov. 22, 1630. See ACKITOAUW.
- CANANDUS and three others, of Essex county, 73. For a tract on Nolum Mehegam or Wawahewany creek near Stephen Osburn's land, along the Minisink path and Wikakike creek; also for a tract near Piscataway Bound brook.
- CAPTAMIN, in Indian deed, 1667. See WAFAMUCK.
- CAPTAMINE, 18. Indian deed, Feb. 28, 1671-72. With four others. For the Berry patent, from Capt. Sandford's up Pasaguck river, five rods beyond Warepeake run, thence across to Hackensack river.
- CAPEHEAM, a sakkamaker of the Hackensacks, in 1678; Capteham Peeters, witness to the Indian deed for Newark in 1667; a landowner near Lodi in 1671; Captahem, "Indian sachem and chief," in 1679; Capestebam, "a sakkamaker of Hackensack," 1678.—*Indians of N. J.*, 110.
- CAPONEAOCONEAON, and two others, "Indian owners," 156. Indian deed, Oct. 20, 1700, for tract in Monmouth county, on S. side of Doctor's creek, along same to Province line, E. to John Baker, N. E. to Cattail brook, to Day island, etc.
- CAPT. JOHN, 639. "Awisham, alias Capt. John." See AWISHAM.
- CARSTANGH (KARTANGH, KASTANGH), a Hackensack chief, in 1660, 1663, and 1664.—*N. Y. Col. Docs.*, XIII, 180; *Indians of N. J.*, 106, 107, 108.
- CELELEMOND, 156. Indian deed, Oct. 20, 1700. See CAPONEAOCONEAON.
- CHECHANAHAM, 550. Indian deed, 7th of 9th mo., 1675. See MOHOCKSEY, MOHAWKSEY.
- COATHOWE, 66. Indian deed, Aug. 22, 1681. See ABOZAWERAMUD.
- COMMUNIPAW, "chief of the Indians of Achkinkeshaky," at the time of the Indian uprising in September, 1653.—*N. Y. Col. Docs.*, XIII, 48; *Indians of N. J.*, 106.
- CORECOPING, 360. Indian deed, Dec. 12, 1699. See COTTENOCHQUE.
- COTTENOCHQUE and five other Indians, 560. Indian deed, Dec. 12, 1699, for land between Haunce Outson on Oldmans creek, Salem creek, and Piles grove.
- COWESCOMEN and two others of Staten island, 1. Indian deed, Oct. 28, 1664, for the Elizabethtown tract.
- CUAHICCON and Shenolope, sachems of Changororas. Indian deed, June 10, 1677, for land at Changororas (Monmouth county).
- CUTTENOQUON, 440. Indian deed, June 9, 1683. See COTTENOCHQUE, MANHAUSETT.
- EDGOQUES, 17. Indian deed, May 19, 1671. See ASSOWAKON.
- EKENERRIHIM, 17. Indian deed, May 19, 1671. See ASSOWAKON.
- ELALIE, 141. Indian deed, Oct. 29, 1701. See TALLQUAFIE.
- EMRIS, 66. Indian deed, Aug. 22, 1681. See ABOZAWERAMUD.
- ENCHIM, 2. Indian deed, March 28, 1651. "Maitano, his brother Neckaoch and brother-in-law Enchein," for tract opposite Staten island, south of Raritan river, westerly to the Great creek or Wakonabeck.
- ENEQUETE, 305. Indian deed, Sept. 10, 1677. "Peanto alias Enequete" and four others, "Indian sakkamackers," for "the land along Delaware river between Rankokus creek on the north, and Timber creek on the south."
- ESCHAPOUS (or ESCHAPOUSE) and three others, 51. Indian deed, Oct. 17, 1681. To Cornelius Longfield, S. side of Raritan (New Brunswick). Another deed, Feb. 26, 1683-84, page 57, from same to same, for land similarly situated.
- ESCHARECK and three others, 51. Indian deed, Oct. 17, 1681. See ESCHAPOUS.
- ESCHARECK and three others, 57. Indian deed, Feb. 26, 1683-84. See ESCHAPOUS.
- ESCHARECK and two others. Indian deed, April 20, 1682. To Cornelius Longfield, for a tract on the W. side of the Roundabout and running up South river (near New Brunswick).

- ETTHUNT, ETIHOE, 573. "Shochanam and Etthunt, Indians," 20th d., 6th mo., 1681.
To Henry Jenjags, for about 300 acres next to Jacob Young's, on a little creek
(Salem county).
- GNICKAP, 66. Indian deed, Aug. 22, 1681. See ABOZAWERAMUD.
- GOSQUE, 7. Indian deed, July 20, 1668. See ANAREN.
- GOTTAWAMECK (witness), 17. Indian deed, May 19, 1671. See ASSOWAKON.
- HAGKINSIEK (witness), 17. Indian deed, May 19, 1671. See ASSOWAKON.
- HAIRISH, in Indian deed, 1667. See WAPAMUCK.
- HAMAHEN, a sakamaker of the Hackensacks, in 1678.—*Indians of N. J.*, 110.
- HAMEMOHAKUN (signed HENEMOHOKUN). Indian deed, Aug. 13, 1708. See
TOPHOW.
- HANRAPEN. Indian deed, 1678. See MANSCHY.
- HANYAHAM (HANAYAHAMM, HANAYAHAME), 7. Indian deed, July 20, 1668. See
ANAREN. P. 18, Indian deed, Feb. 23, 1671-72; see CAPATAMINE. P. 97,
Indian deed, Nov. 29, 1686, with four others, "Indian proprietors," to Capt.
John Berry, for their share of a run of water called Warepeake or Rerakanes,
or Sadle river, of which said Berry had bought a share before.
- HAFEMUCQUOXA and Tolomhon, Indian owners, 155. Indian deed, July 19, 1703,
for a tract along the Province line from Senpinc to Augustine Gordon's, w. of
Wm. Watson.
- HAYAMAKENO, 73. Indian deed, Oct. 16, 1684. With nine others, for a tract on
Hackensack river, Kovand's land, Peskeckie creek, and Metchipakos creek.
- HEFENEMAN, 73. Indian deed, Oct. 16, 1684. See HAYAMAKENO.
- HIPHOCKANOWAY and three others, "Indian sachimakers," 196. Indian deed, Dec.
16, 1689, for a tract in Monmouth county, from the s. w. line of the Middle-
town men's land at Doctor's creek, running into Crosswicks creek; over three
branches of Assinpinck creek.
- HIPPOQVONNO, Indian sachamar. Indian deed, June 1, 1709, for land on the east
side of Crosswicks creek (Monmouth county).
- HOAHAM and Quonalowmon, sachems, 156. Indian deed, Nov. 4, 1702. For tract
from and along Rockie brook to and along Milston river as far as David Lyell's
and Senpink.
- HOAKEN and two others, 378. Indian deed, Sept. 12, 1697. For "one barrel of
cider, five poynts of rum, two shillings," all the tract on Manasquan river,
adjoining Richard Hartshorne.
- HOEHAM and four others, sackimackers, 422. Indian deed, April 9, 1688, to Adlord
Bowde, on behalf of Gov' Daniel Coxe, for tract on the n. branch of the Rari-
tan, down said branch to the road from Delaware falls to New York, s. to
Thomas Budd's line, over the Stony hills on the n. side of Milstone river, thence
n. w. and s. w. to beginning.
- HOHAM, Teptamun, and other sackimackers, 422. Indian deed, March 30, 1688,
to Adlord Bowde, for Governour Daniel Coxe, for tract on Shabbicunck creek
on the road to New York, three miles from falls of Delaware river (Trenton),
n. along Thomas Budd, past Menapeason to the mouth of Laocolon creek
above Mecokin's wigwam, thence down along the Delaware to a mile above
the Falls mills, thence e. to Shabbicunck creek.
- HOUGHAME, 165. Indian deed, July 25, 1689. See AUSPEAKAN.
- HUGHON and Lumoseecon, sachems, 143. Indian deed, May 8, 1689, for a tract be-
tween Cranberry brook and Milston river, York road and Thomas Budd.
- ICHICHEPE, 66. Indian deed, Aug. 22, 1681. See ABOZAWERAMUD.
- IROOSEEKE, 65. Indian deed, April 3, 1678. Seahopper and Irooseekee, sachems, to
Jacob Truax (of Middletown). Also Indian deed, Aug. 22, 1686. See ABOZA-
WERAMUD.
- IRRAMEN (a witness), 17. Indian deed, May 19, 1671. See ASSOWAKON.
- IRRAMICKIM, 17. Indian deed, May 19, 1671. See ASSOWAKON.
- ISHAYERAK and two others, "Middlesex County Indians," 73. Indian deed, March
20, 1684-85. For a tract on South river, running six miles along it to Thomas
Lawrence's land.
- JACKICKON, 395. Indian deed, Sept. 10, 1677. See ENNEQUETE.
- JAIAPACH, sachem of Minlissing, 230. Indian deed, June 6, 1695. See TAEFAN.
(Yawpaw is the name of a place near Pompton.)

- JAKOMIS, 424. Indian deed, June 24, 1688. See MOLHUNT.
- JANATAN and five others, chief sachems of Woomanasing. Indian deed, Aug. 12, 1677, for land between the two Hopp rivers (Monmouth county).
- JAN CLAAS, Indian, 73. Indian deed, Oct. 16, 1684. See HAYAMAKENO.
- JANICKCOOH (a witness), 440. Indian deed, June 9, 1683. See MANHAUXETT.
- JAPHOME (or TAPHOME), in Indian deed, May 19, 1710. See MEMERESGUM.
- KAGKENNIP, I. Indian deed, Jan. 10, 1658. See BOMOKAN.
- KARSTANGH, see CARSTANGH.
- KATAMAS, 395. Indian deed, Sept. 10, 1677. See ENEQUETE.
- KEKROPPAMANT, 395. Indian deed, Oct. 10, 1677. See AHTAHKONES.
- KEKSAMEGIN, 17. Indian deed, May 19, 1671. See ASSOWAKON.
- KENARENAWACK, 7. Indian deed, July 20, 1668. See ANAREN.
- KEPANOCKONICKON, 422. Indian deed, April 9, 1688. See HOZHAM.
- KEROMACK, KEROMACK, sachem, and three others, 51. Indian deed, Oct. 17, 1681; see ESCHAPOUS. Page 57, Indian deed, Feb. 20, 1683-84; see ESCHAPOUSE. See QUEREMACK.
- KESHUWICON, 440. Indian deed, June 9, 1683. See MANHAUXETT.
- KEWIGHAHAM (witness), 17. Indian deed, May 19, 1671. See ASSOWAKON.
- KIGHEWIGWOM [Query: *Kiche wigwam* = "big house"], 560. Indian deed, Dec. 12, 1699. See COTTENOCHQUE.
- KNATSCIOSAN, witness to Indian deed of July 11, 1667. See WAPAMUCK. Wounded a Dutchman at Bergen in 1678.—*Indians of N. J.*, 110.
- KNOSHICOWAY. Indian deed, Aug. 13, 1708. See TAPHAOW.
- KONJURING. Indian deed, Aug. 13, 1708. See TAPHAOW.
- KOVAND, 73. Indian deed, Oct. 16, 1684. See HAYAMAKENO. The tract bounds on "Kovand's land." He is one of the grantors, also.
- LUMOSERON, 143. Indian deed, May 8, 1699. See HUGHON.
- MACHIERICK HITOCK, Tospersmick, Wennaminck Keckspennen, sachems of Hoppemense, 7. Indian deed, Oct. 4, 1665, for the Hoppemense tract between two creeks, over against Anthony Breyant (Salem county).
- MACHKETUSKE, 66. Indian deed, Aug. 22, 1681. See ABOZAWERAMUD.
- MACQUINAKHIM (witness), 17. Indian deed, May 19, 1671. See ASSOWAKON.
- MAHAWKSEY, 539. Indian deed, Nov. 7, 1675; see ALLOWAYES. See MOHOCKSEY.
- MAHGPETA (signed MAHAGPETA). Indian deed, Aug. 13, 1708. See TOPHOW.
- MAHOMECUM, alias King Charles, cousin (nephew) of Nemaunton, 513. Indian deed, April 11, 1697, for a tract at the seaside on the W. side of the bay, N. W. of Little Egg harbor, called Amintoneck.
- MANUSTONE, in Indian deed, 1667. See WAPAMUCK.
- MANOWAONE, 1. Indian deed, Oct. 28, 1664. See COWESCOMEN.
- MANAWAYEUM. Indian deed, Nov. 18, 1709. See SHERIKHAM.
- MANDENARK, a sakamaker of the Hackensacks, in 1678.—*Indians of N. J.*, 110.
- MANHAUXETT, 440. Indian deed, June 9, 1683, for a tract between Cohannick creek and Morris river, beginning at the head of Cohannick, etc.
- MANICKOFON, 424. Indian deed, June 24, 1688. See MOLHUNT.
- MANOKY, a sakamaker of the Hackensacks, in 1678.—*Indians of N. J.*, 110.
- MANCHY and four others, "sakamakers of Hackensack." Indian deed, 1678, for lands in Bergen county (7).—*Indians of N. J.*, 110.
- MANSEIM, p. 230. Indian deed, June 6, 1695.—*Indians of N. J.*, 112. See TARPAN.
- MANUMIE, see NUMMI.
- MAQUAINECK, 66. Indian deed, Aug. 22, 1681. See ABOZAWERAMUD.
- MARCHAUT, 141. Indian deed, Oct. 29, 1701. See TALLQUAFIE.
- MARENAW, 73. Indian deed, Oct. 16, 1684. See HAYAMAKENO.
- MAKAINAPULU. Indian deed, May 19, 1710. See MEMERESGUM.
- MASTER THOMAS, "Indian king of Stepson's island" (off Cape May, now submerged), 505. Indian deed, July 10, 1694, for said island, between Cedar Harnocke and Morris river.
- MATANGO and seven others, "chiefs and owners of the land in the Newesingsh," Agreement, Dec. —, 1663, to sell only to the Director-General and Council of New Netherlands.—*N. F. Coll. Docs.*, xii, 314-316; *Indians of N. J.*, 101.
- MATCHUES (a witness), 440. Indian deed, June 9, 1683. See MANHAUXETT.
- MATSKATH (Winfield gives it as Wathkath, which is an impossible reading in Dutch). Indian deed, Nov. 22, 1630. See ACKITOAUW.

- MATTANO, 1. Indian deed, Oct. 28, 1664. He is called Mattano, a "chief of the Staten Island and Nyaack (on Long island) savages," in 1664. — *N. Y. Col. Docs.*, XIII, 386. — *Indians of N. Y.*, 108.
- MATTANO, 2. Indian deed, March 28, 1651. See ENCHEIM.
- MAUNDICOS, 424. Indian deed, June 24, 1688. See MOLHUNT.
- MAYAWAYKUM. Indian deed, Nov. 18, 1709. See SHERIKHAM.
- MCHAT, agreement, Dec. —, 1663. See MATANOO.
- MECOKIN's Wigwam, 422. Indian deed, April 9, 1688. See HOHAM, NECOKIN.
- MEJAWAPAPIN (witness), 17. Indian deed, May 19, 1671. See ASSOWAKON.
- MELLINGHERIM (MESSINGPEJIM), 17. Indian deed, May 19, 1671. See ASSO-WAKON.
- MEMERESUM, "sole sachem of all the nations of Indians" on Remopuck river and on the W. and E. branches thereof on Sadle, Pasquoek, Narashunk, and Hack-insack rivers, and Tapsan, with six other Indians. Indian deed, May 19, 1710, for the upper parts of the present Passaic and Bergen counties. Also Indian deed, Nov. 18, 1709. See SHERIKHAM.
- MEMEWOCKAN, 1. Indian deed, Jan. 10, 1658. See BOMOKAN.
- MEMMES SCYTHEYTOY, sachem, 73. Indian deed, Oct. 16, 1684. See HAYAMAKENO.
- MENARIHOJONDOR. Agreement, Dec. —, 1663. See MATANOO.
- MENDAWACK, in Indian deed, 1678. See MANSCHY.
- MENDEZMASS, 73. Indian deed, Oct. 16, 1684. See HAYAMAKENO.
- MENGOOTECUS, "Indian proprietor," 516. Indian deed, April 1, 1694, for tract on the N. W. of the S. branch of Passack river, above the upper falls, between Pequanoek river and Senecomoek river.
- MERICKANAITUGH. Indian deed, Nov. 18, 1709. See SHERIKHAM.
- MEREKOPPE, Indian sachem of Woomanasing. Indian deed, Aug. 12, 1677. See JANATAN.
- MESSINGPEJUN, 17. Indian deed, May 19, 1671. See ASSOWAKON.
- METAPIS, 196. Indian deed, Dec. 16, 1689. See HIPHOGRANOWAY.
- METTATOCH, 73. Indian deed, Oct. 16, 1684. See HAYAMAKENO.
- METTECHMAHON, 73. Indian deed, Oct. 16, 1684. See HAYAMAKENO.
- MINDOWASHWEN, 73. Indian deed, Oct. 30, 1684. See CANANDUS.
- MOCHANHAN, Wiquales, Quanalem, Indians of Monmouth county, 310. Indian deed to John Reid for a tract at the mouth of North brook in Rockie brook.
- MOCKHANGHAN and three others, "East Jersey Indians," 283. Indian deed, Sept. 2, 1696, to John Reid, of Horriacle, for the land about Manalapan from the mouth of Mount brook up Manalapan river to Welch brook, etc.
- MOCQUACK, in Indian deed, April 9, 1679. See ARBORICKAN.
- MOHAWSEY and five others, 559. Indian deed, 7th of 9th mo., 1675.
- MOHOCKSEY, 395. Indian deed, Sept. 27, 1677. See APPERINGUES. And see MOHAWSEY, p. 559.
- MOHAWSEY, p. 559. Indian deed, 6th of 12th mo., 1675-76, for the land called Little and Great Cohansick (Salem).
- MONOWUQVAND (signed Mokowuquando), Indian deed, Aug. 13, 1708. See TOPHOW.
- MORUSCOWUNGIE. Indian deed, Aug. 13, 1708. See TAPHOW.
- MOHUTY, 559. Indian deed, 7th of 9th mo., 1675. See MOHAWSEY, MOHOCKSEY.
- MOKOWUQUANDO. Indian deed, Aug. 13, 1708. See TOPHOW.
- MOLHUNT and six other Indian sackimackers, 424. Indian deed, June 24, 1688, for a tract from and along Cohansick creek to Oldman's creek, to Timber creek, thence to a river running into Little Egg harbor, thence to Delaware bay at Stephant's isle, etc.
- MONOUCKROMEN, alias Mr. Tom, 424. Indian deed, April 30, 1688. See SAKAMOV.
- NACHOLAS, 141. Indian deed, Oct. 29, 1701. See TALLUAFIE.
- NACKPUNCK, 97. Indian deed, Nov. 29, 1686. "Weighcreens (on behalf of Nack-punck)," and others. See HANAYAHAME. Nackpunk is the name of a swamp in the S. E. portion of Wayne township, which is drained by Nackpunk brook into Singack river. In 1895 I was retained to draft an act of the Legislature, incorporating the Borough of Totowa, and the name of this brook was given to me as one of the points in the boundary. I had no recollection of ever meeting with the name, and assumed it to be Dutch, and so wrote it Naaktpunkt—

"bare point"—in the act (*Law*, 1896, p. 98). This explanation is given for the benefit of some future student. While writing this note, I am informed by a native of Wayne township, seventy years of age, that he always understood from the "old people" that Nachpunk—and thus he pronounced the word, as in German or in Dutch—was an Indian name. The swamp in question is about 5 miles s. w. of the Pater-on city hall. The mouth of Saddle river, in which the Indian Nachpunk was interested, is about 5 miles s. e. of the city hall. It is possible that the Indian referred to may have removed his wigwam from Saddle river to the swamp, afterward called Nachpunk, but it was not an attractive place for the location of even a wigwam.

NANHOOSING, 395. Indian deed, Oct. 10, 1677. See AHTAHKONES.

NAPKAM, in Indian deed, 1667. See WAFAMUCK.

NECKAOCH, 9. Indian deed, March 28, 1651. See ENCHEIM.

NECOKIN'S Wigwam, 422. Indian deed, April 9, 1688. See HOHAM.

NECOMIS, 559. Indian deed, Nov. 7, 1675. See ALLOWAYEE.

NECOSHEBESCO (a squaw), 549. Indian deed, Nov. 7, 1675. "Necomis and his mother Necos-hebesco." See ALLOWAYEE.

NESHILAKITT (NEKIGILAWIT, MEKIGUAM or NESKIGLAT), 230. Indian deed, June 6, 1695.—*Indians of N. J.*, 112. See TAEPGAN.

NESEKORHOCK, 73. Indian deed, Feb. 25, 1685-86. See ISHAVEKAK.

NEWENAFER, 73. Indian deed, Oct. 30, 1684. See CANANDUS.

NEWSEGO, 559. Indian deed, 7th of 9th mo., 1675. See MORAWESKY, MOHOCK-SEY.

NUMMI, MANUMIE, 424. Indian deed, April 30, 1688. See SAKAMOY.

OKANISHEON, 395. Indian deed, Oct. 10, 1677. See AHTAHKONES.

OKEYMAN, 639. Indian deed, June 16, 1703. See AWIHAM.

OLOMOKUNCIN, 196. Indian deed, Dec. 16, 1689. See HIFHOCKANOWAY.

ONAGEPUNK (ONAGAPONK), 230. Indian deed, June 6, 1695.—*Indians of N. J.*, 112. See TAEPGAN.

ONATAGH, 17. Indian deed, May 19, 1671. See ASSOWAKON.

ONSRAGGIM, 17. Indian deed, May 19, 1671. See ASSOWAKON.

ORAGNAP, 230. Indian deed, June 6, 1695.—*Indians of N. J.*, 112. See TAEPGAN.

ORATAMIN, a chief of the Hackensacks in 1649.—*N. Y. Col. Docs.*, XIII, 25; *Indians of N. J.*, 105.

ORATAMIN, "sachem of the savages living at Achkinshohacky" (Hackensack), party to a treaty of peace with the Dutch, April 22, 1643.—*N. Y. Col. Docs.*, XIII, 14; *Indians of N. J.*, 104.

ORATAMY, "chief of Achkinshohacky," with Pacham and Pennekeek, parties to a treaty with the Dutch, in 1645.—*N. Y. Col. Docs.*, XIII, 25; *Indians of N. J.*, 105.

ORATAN, sachem of Hackensack, 8. Patent, June 24, 1669, to Mrs Sarah Kiersted, for a neck of land given to her by Oratan, the sachem of Hackensack, lying between Hackensack river and Overpecks creek, 2260 acres. Quite an extended biographical sketch of this chief is given in *Indians of N. J.*, 104-109. He is also called Oratam, Oratamy, Oratamin, Orat-on.

OUTRAFO (signed OURAPAKOMUN). Indian deed, Aug. 13, 1708. See TAFHAOW.

OWRAMOKON, OURAMOKON. Indian deed, Aug. 13, 1708. See TOPHOW.

PAAKER (or PAAKER SIKKAAK, or PAAKLI SEKAAKI), 230. Indian deed, June 6, 1695.—*Indians of N. J.*, 112. See TAEPGAN.

PACHEM, "a crafty man" of the Hackensacks, who urged the Indians to a general massacre early in 1643.—*N. Y. Col. Docs.*, IV, 8; *Indians of N. J.*, 104. See ORATAMY.

PAJPEMOOR, "brother to and reputed by Pajpemoor," etc. Agreement, Dec., 1663. See MATANOO.

PAMA CORNE, 278. Indian deed, Sept. 12, 1697. See HOAKEN.

PAMEHELETT, 73. Indian deed, Feb. 25, 1685-86. See ISHAVEKAK.

PASAGUYNOM. Agreement, Dec., 1663. See MATANOO.

PASSABUKRY (witness), 17. Indian deed, May 19, 1671. See ASSOWAKON.

PAWMEYOP, 73. Indian deed, Feb. 25, 1685-86. See ISHAVEKAK.

PAYHICKEN, 278. Indian deed, Sept. 12, 1697. See HOAKEN.

PAYMELL. Indian deed, Aug. 13, 1708. See TAFHAOW.

- PAYWAREN, of Somerset county, 130. Indian deed, Aug. 14, 1688. For land on Hollands brook and Raraton river.
- PEANTO, "alias ENQUETE." See ENEQUETE.
- PECKAONUS (PECKANOUSSE, PERKAONUS), 51, 57. Indian deeds, Oct. 17, 1681, April 20, 1682; Feb. 26, 1683-84. See ESCHAPOUS.
- PERORKE, Indian sachem of Woomanasing. Indian deed, Aug. 12, 1677. See JANATAN.
- PENNEKECK, "the chief behind the Col" (in the neighborhood of Communipaw), the principal Indian speaker at a conference with the Dutch in 1649.—*N. Y. Col. Docs.*, XIII, 25; *Indians of N. J.*, 105. "Chief of the Indians of Achkinke-shaky," at the time of the Indian uprising in Sept., 1655.—*N. Y. Col. Docs.*, XIII, 48; *Indians of N. J.*, 106.
- PERAWAE, Indian deed, 1667. See WAPAMUCK.
- PEREWIN, "lately chosen sachem of ye Hackingsack, Tappan and Staten Island Indians," in August, 1669.—*N. Y. Col. Docs.*, XIII, 428; *Indians of N. J.*, 109.
- PERNYATH, 66. Indian deed, Aug. 22, 1681. See ABOZAWERAMUD.
- PETHEATUS, 395. Indian deed, Oct. 10, 1677. See ANTAHKONES.
- PEWERIGHWEIUGHEN (witness), 17. Indian deed, May 19, 1671. See ASSOWAKON.
- PIKRWIM, "ye Sachem of Pau" (Pavonia, now part of Jersey City), witness to Indian deed of July 11, 1667. See WAPAMUCK.
- PIEWECHERENOS, "alias Hans, the Savage." Agreement, Dec., 1663. See MATANOO.
- POJEMOOR, Agreement, Dec., 1663. See MATANOO.
- POWANTAPIS, 66. Indian deed, Aug. 22, 1681. See ABOZAWERAMUD.
- PREAKAR, 136. Indian deed, Oct. 20, 1700. See CAPONEAOCONEAGN.
- PYAHICKEN, 283. Indian deed, Sept. 2, 1696. See MOCKHANGHAN.
- QUAHICK, Indian sachem of Woomanasing. Indian deed, Aug. 12, 1677. See JANATAN.
- QUANALAM, 283. Indian deed, Sept. 2, 1696. See MOCKHANGHAN.
- QUENALOWMON, 156. "Hoaham and Quenalowmon, sachems." Indian deed, Nov. 4, 1702. See HOAHAM.
- QUEREMACK, Eschereck, and Peckanouse, 51. Indian deed, April 20, 1682; see ESCHERECK. Quersmack, sachem, 57. To Capt. Henry Greenland, for 80 acres E. & E. of the Roundabout. See KEROMACK.
- QUATENANS, 630. Indian deed, June 16, 1703. See AWISHAM.
- QUHIVE, 560. Indian deed, Dec. 12, 1699. See COTTENOCHQUE.
- RAIJOLIN, RA GOLDEN, Indian deed, Nov. 18, 1709. See SHERIKHAM.
- RAWANTAQUES (RAWANTAGWAS), Indian deed, May 19, 1710. See MEMERESUM.
- RAWAUTAQWAYWOANG, Indian deed, Nov. 18, 1709. See SHERIKHAM.
- RAWTOM, 73. Indian deed, Oct. 16, 1684. See HAYAMAKENO.
- REMMATAP, "chief of the Indians," 1. Indian deed, August 3, 1650, for lands, bays, creeks, and rivers, called *A'sawawes*, etc., on the s. side in the bay of North river.
- RENNOWIGHWAN, 395. Indian deed, Sept. 10, 1677. See ENEQUETE.
- ROMANICKANEN, 422. Indian deed, April 9, 1688. See HORHAM.
- ROOKHAM (see WICKWAM), 230. Indian deed, June 6, 1695.—*Indians of N. J.*, 112. See TAEPGAN.
- RUMASHKAM, 75. Indian deed, March 20, 1684-85. See ISHAYEKAK.
- SACCATOREY, 550. Indian deed, Nov. 7, 1675. See ALLOWAYEK.
- SACKWOMECK, Indian deed, 1630. See AREOMEAUW.
- SAGHKOW, 1. Indian deed, January 10, 1658. See BOMOKAN.
- SAGTEW, 17. Indian deed, May 19, 1671. See ASSOWAKON.
- SAKAMOV, SAQUEMOY, "and other Indian ackimackers," 424. Indian deed, April 30, 1688, to Adford Bowde, for Gov. Daniel Coxe, tract from Stephants creek on the s. side of Delaware bay to Petequieck creek or next creek, w. of Little Egg harbor, etc.
- SAMES, 1. Indian deed, January 10, 1658. See BOMOKAN.
- SEAHPEPPE and Irooscke, sachems, 65. Indian deed, April 3, 1678, to Jacob Truxx for a certain tract of land (probably in Monmouth county).
- SEKAPPE, 395. Indian deed, Sept. 10, 1677. See ENEQUETE.
- SESNICKAM, 17. Indian deed, May 19, 1671. See ASSOWAKON.

- SESSOM, Indian deed, 1667. See WAFAMUCK.
- SEWAFIERINOM, 17. Indian deed, May 19, 1671. See ASSOWAKON.
- SEWECHROMI, 74. Indian deed, Oct. 30, 1684. See CANANDUS.
- SEWEGGAMIN, "alias Hans Weghewarion," 17. Indian deed, May 19, 1671. See ASSOWAKON.
- SHACANUM, 559. Indian deed, 7th of 9th mo., 1675. See MOHAWKSEY, MOHOCKSEY.
- SHAPPEARA, 66. Indian deed, Aug. 22, 1681. See ADOZAWERAMUD.
- SHAPUNDAQUEHO, 73. Indian deed, March 20, 1684-85. See ISHAYEAK.
- SHENOLOPE (SHENOLOPE), sachem of Changorons. Indian deed, June 10, 1677; see CUAHICCON.
- SHERIKHAM and eleven others. Indian deed, August 12, 1677; see JANATAN.
- SHERIKHAM and eleven others. Indian deed, Nov. 18, 1709, for the Ramapo tract, in the N. part of the present Bergen and Passaic counties.
- SHOCHANAM, 573. Indian deed, 20th of 6th mo., 1681. See ETTHUNT.
- SICKAJO, 424. Indian deed, June 24, 1688. See MOLHUNT.
- SIEKAAR (see PAAKEK), 230. Indian deed, June 6, 1695.—*Indians of N. J.*, 112. See TAEPGAN.
- SIPHAM. Indian deed, Nov. 18, 1709. See SHERIKHAM.
- SITHEME (SIPHAM). Indian deed, May 19, 1710. See MEMERESCUM.
- SUCCOLANA, 440. Indian deed, June 4, 1683. See MANHAUXETT.
- SUPA PATONARUM, 66. Indian deed, Aug. 22, 1681. See ADOZAWERAMUD.
- SWANAMENIGH (a witness), 440. Indian deed, June 9, 1683. See MANHAUXETT.
- SWEIKON, SQUEKKON, 424. Indian deed, April 30, 1688. See SAKAMOV.
- SYCAKEKA. Agreement, Dec. —, 1663. See MATANOO.
- TAKPAN, TAEPGAN, TAPGAN, and ten others, sachems of Minnasing, 230. Indian deed, June 6, 1695, for extensive tracts at and near Pompton.
- TAGHQUEKOM, 17. Indian deed, May 19, 1671. See ASSOWAKON.
- TALLQUAPIE, TOLLQUAPIE, and three others, 141. Indian deed, Oct. 29, 1702, for tract on E. side of the N. branch of Raritan river, along Machcopoiken's land, N. W. to the mountains above Petchpeck and E. along the mountains to the Blew hills.
- TAMACK, 7. Indian deed, July 20, 1668; see ANAREN. P. 18. TAMAGE, Indian deed, Feb. 28, 1671-72; see CAPATAMINE.
- TANTAQUA, 7. Indian deed, July 20, 1668; see ANAREN. P. 18. Indian deed, Feb. 28, 1671-72; see CAPATAMINE. P. 97. Indian deed, Nov. 29, 1686; see HANAYAHAME.
- TANTEGUAN, a sakamaker of the Hackensacks, in 1678.—*Indians of N. J.*, 110.
- TAPASHTO, 424. Indian deed, June 24, 1688. See MOLHUNT.
- TAPTAGW (signature TOPNOW), and eleven others. Indian deed, August 13, 1708.
- TAPROME. Indian deed, 1710. See MEMERESCUM.
- TATAMECKHO, 395. Indian deed, Sept. 27, 1677. See APPERINGUEL.
- TAWACKHACHU (witness), 17. Indian deed, May 19, 1671. See ASSOWAKON.
- TAWAGKIS (witness), 17. Indian deed, May 19, 1671. See ASSOWAKON.
- TEKWAPO. Indian deed, 1690. See AKROMAUW.
- TEPTAOFAMUN, 422. Indian deed, March 30, 1688. See HOHAM.
- TESSIOCON, 424. Indian deed, June 24, 1688. See MOLHUNT.
- THERINQUES, 1. Indian deed, Jan. 10, 1658. See BOMOKAN.
- TIPTAOFAMAN, 422. Indian deed, April 9, 1688. See HOHAM.
- TOLOMHON, 155. Indian deed, July 19, 1703. See HAYEHUQUOXA.
- TOPHOM. Indian deed, Nov. 18, 1709. See SHERIKHAM.
- TOROCHO, 559. Indian deed, 7th of 9th mo., 1675. See MOHAWKSEY, MOHOCKSEY.
- TOPECHUCK, 7. Indian deed, Oct. 4, 1663. See MACHIERICK HITOCK.
- TOUWITHWICH. Indian deed, Nov. 18, 1709. See SHERIKHAM.
- VEREUTTING, 422. Indian deed, April 9, 1688. See HOHAM.
- WAKAGUSHON (not in body of deed, but signed). Indian deed, Aug. 13, 1708. See TOPHOW.
- WALLAMASSEKAMAN, 173. Indian deed, April 6, 1667. See WANAMASOA.
- WAMESANE. Indian deed, 1667. See WAFAMUCK.
- WANAMASOA, Wallamassekaman, and Waywinotumce, chief sachems, 173. Indian deed, April 6, 1667. For a tract within the branches of a great pond (?) called Ulickaquecks, N. Thomas Potter and Samuel White, E. the pond, S. a brook, W. a line of marked trees. (? Monmouth county.)

- WAPAMUCK, the sakamaker, and nine other Indians "now belonging to Hakinack." Indian deed for Newark, July 11, 1667.—*Newark Town Records*, 278-280; *Indians of N. J.*, 109.
- WAPARENT, Indian deed, May 19, 1710; see MEMERESKUM. Indian deed, Nov. 18, 1709; see SHERIKHAM.
- WAPPAPPIN, 1. Indian deed, January 10, 1658. See BOMOKAN.
- WAWIAGIN, 230. Indian deed, June 6, 1693.—*Indians of N. J.*, 112. See TAEPGAN.
- WAWENOTONG, 196. Indian deed, Dec. 16, 1689. See HIPHOCKANOWAY.
- WAYMOT, Indian deed, Aug. 12, 1677. See JANATAN.
- WAYWENOTAN, 168. Indian deed, July 25, 1689. See AUSPEAKAN.
- WATWINOTUNCE, 173. Indian deed, April 9, 1687. See WANAMASOA.
- WECAPROKIKAN, Indian deed, 1667. See WAPAMUCK.
- WEGHWENIN, HANS, 17. Indian deed, May 19, 1671. See ASSOWAKON.
- WEGWAFERAKIN (witness), 17. Indian deed, May 19, 1671. See ASSOWAKON.
- WEIGHERENS (on behalf of Nackpanck), 97. Indian deed, Nov. 29, 1686. See HANAYAHAME.
- WENAMICK, sakamaker of the land on the S. side of Delaware river over against New Castle, 4. Indian deed, July 26, 1666, for a parcel of land along said river from the creek, "this side of Sife (?) Johnson to the other side of the west creek." (Salem county.)
- WENAHINCK KICKQUENEN, 7. Indian deed, Oct. 4, 1665. See MACHIERICE HITOCK.
- WESKAKITT, 395. Indian deed, Oct. 10, 1677. See AHIAHKONES.
- WEWENATOKWEE, 1. Indian deed, January 10, 1658. See BOMOKAN.
- WEYARAWAGHHEYN (WEYARA WAGHEUM), Indian deed, Aug. 13, 1708. See TAPHAOW.
- WIINSIS, 17. Indian deed, May 19, 1671. See ASSOWAKON.
- WICKWAM (or WICKWAM KIOKHAM), 230. Indian deed, June 6, 1693.—*Indians of N. J.*, 112. See TAEPGAN.
- WICKWELA, Indian sachem in East Jersey, 147. Indian deed, April 29, 1702, for a tract on Cranberry creek, in Middlesex county, half a mile below the post-road bridge. This Indian (whose name is given variously as Wequahla, We-quah-a-lah, We-quah-a-lah, Weequahela, Weequahela, Weequahelah, Wickwela, Wick-quaylas, Wickowela, Wikquaylas, Wikquaylas, etc.) was in 1709 called upon by the Governor and Council of New Jersey to conduct a party of Indians against Canada. He lived on South river in fine style, cultivated an extensive farm, had cattle, horses, and negroes, and furnished his house in English fashion. "He dined with Governors and other great men, and behaved well." He finally quarrelled with his neighbor, Capt. John Leonard, about the right to some land, and shot him, for which he was hanged, June 30, 1727. See *Indians of N. J.*, 144-149.
- WICKWELA, Indian sachem, 156. Indian deed, July 1, 1703. For land in Middlesex county, from the bridge over Rockie brook on the post-road to Milston river, along the same to David Lyell's, along the same to Assinpink brook, up the brook to the post road, along the same to beginning.
- WIGHKOKENMI (witness), 17. Indian deed, May 19, 1671. See ASSOWAKON.
- WIKGAYLAS, 283. Indian deed, Sept. 2, 1666. See MOCKHANGHAM.
- WIKQUAYLAS, Indian sachem of part of East Jersey, 150. Indian deed, June 3, 1701, for tracts near Manalapan.
- WINYM (Winfield gives it as Mingm). Indian deed, Nov. 22, 1690. See ACKITOAUW.
- WITTAMACKPAI, 97. Indian deed, Nov. 29, 1686. See HANAYAHAME.
- WOGGERMAHAMECK, Indian deed, April 9, 1679. See ARBORICKAN.
- YOUTHKEN (?) (a witness). Indian deed, June 9, 1683. See MANHAUKETT.

WILLIAM NELSON.

Anthropological Collections of Yale University Museum.—Dr Paul Ehrenreich, of Berlin, Germany, recently made an extended tour in this country for the special purpose of studying museums of anthropology. An account of his observations and impressions appears

in Heft 1 of the *Zeitschrift für Ethnologie*, 1900.¹ The fourteen museums and collections visited by Dr Ehrenreich, and described by him as the "most important in the United States," are: *New York*, American Museum of Natural History. *Philadelphia*, (a) Free Museum of Science and Art; (b) Academy of Sciences. *Washington*, (a) United States National Museum; (b) Smithsonian Institution. *Cambridge*, Peabody Museum of Harvard University. *Salem*, Essex Institute. *Chicago*, Field Columbian Museum. *San Francisco*, (a) California Academy of Sciences; (b) The Museum in the Golden Gate Park, established in 1893. *St Louis*, Museum of the Historical Society. *Cincinnati*, Art Museum, including rich ethnological and prehistoric collections. *Oraibi*, The Voth collection.² *Pasadena*, Mrs Lowe's collection.

Dr Ehrenreich's chief reason for publishing his impressions is that they "might be of service to others who intend to travel in the United States." He has done an important service, not only to foreign travelers in America, but also to our own countrymen. Dr Ehrenreich does not claim that his list of American museums is complete. It may be taken for granted that he knew nothing of the anthropological collections at the Yale University Museum, or he would have stopped at New Haven on his way from New York to Boston. Motives similar to those which prompted the German savant's publication give reason for a brief description of collections of considerable importance in New Haven.

The anthropological collections of Yale University Museum have been accumulating for more than thirty years and owe their existence almost wholly to the foresight and liberality of the late Prof. O. C. Marsh. They comprise from 15,000 to 18,000 specimens, representing, geographically, thirty-six states and territories, Hawaii, and the Philippines; Africa, Austria, Australia, Belgium, Bougainville islands, British Guiana, Chile, China, Costa Rica, Congo Free State, Denmark, Ecuador, Egypt, England, Fiji islands, France, Germany, Greece, Greenland, Guatemala, India, Ireland, Italy, Japan, Java, Malay peninsula, Mexico, Navigator islands, New Guinea, New Zealand, North Pacific, Northwest coast, Norway, Panama, Peru, Samoa, Sweden, Turkey, West Indies, and Yucatan. The greater part of the material is archeological. The antiquities from Central America alone number over 3000 specimens, the most important being fifty-three gold ornaments from the Province of Chiriqui, several stone statues, and unusually fine specimens of ancient ceramic art. The collection of Missouri pottery, more than a

¹ "Mittheilungen über die wichtigsten ethnographischen Museen der Vereinigten Staaten von Nord-America."

² The Voth collection now belongs to the Field Columbian Museum, Chicago. See this journal, vol. 1, p. 394; vol. 2, p. 261.

thousand pieces in all, is one of the largest and best in the country. Among the Mexican antiquities may be mentioned an ancient "calendar stone" of great value, obsidian and other stone masks, a carved stone yoke representing a frog, jade ornaments, stone and terra cotta statues and figurines. A representative collection from the Quaternary and cavern deposits of western Europe, the Swiss lake-dwellings, and the shell-heaps and dolmens of Scandinavia has recently been installed. In respect to physical anthropology the Museum possesses several hundred crania, chiefly Amerindian, Hawaiian, and New Guinean, human and anthropoid skeletons, and a full set of laboratory instruments. The fairly comprehensive ethnologic series cannot be seen to advantage at present for lack of suitable cases, a condition which, unfortunately, affects all the collections. Notwithstanding limitations of this nature, those in charge will gladly do all in their power to render the collections accessible for purposes of study.

GEORGE GRANT MACCURDY.

Natives of the Island of Guam.—Kotzebue, who visited Guam in 1817, states in the narrative of his voyage that he saw only one couple of full-blood natives on the island,—“a picture,” he says, “of how the Spaniards pacified the natives.” This statement has been frequently quoted, and several writers give the impression that the island is now peopled by a mongrel mixture of Filipinos, Caroline islanders, and Spanish mestizos. As a matter of fact, the greater part of the natives form a homogeneous people speaking the aboriginal language of the island, which has been modified to a certain extent by the introduction of words from the Spanish, but which retains in a remarkable degree its original grammatical forms and methods of construction, to which the adopted words must conform in order to express gender, person, number, and tense.

Spanish, which has been the official language of the Mariannas since the colonization of the group by the Jesuit missionaries in 1668, is spoken by a majority of the natives; but there are many families who do not in the least understand it. In the courts an interpreter is always necessary, and many amusing stories are told of attempts of natives to make their confessions to Spanish priests unfamiliar with the Chamorro language. Indeed, the use of the native speech is universal in family life. It is safe to say that there are not two families on the island in which Chamorro is not the usual medium of communication. At entertainments, although Spanish is used in conversing with foreigners, when two señoritas carry on a conversation together, or one member of a family speaks to another, it is always in Chamorro.

The language is interesting in possessing certain Malayan elements in common with the great Sawaiori-group of dialects in Polynesia; but it differs from them radically in its grammatical forms. In the Chamorro language possession is indicated by suffixes added enclitically to the name of the object possessed, somewhat as in the Hebrew and in the Papuan group of languages. Tense and number are expressed by interfixing particles into the body of the verb and by the reduplication of syllables, somewhat after the manner of the Tagalo and Visayan languages in the Philippines. There is no distinct form for the dual number of the pronoun, although the dual may be expressed by the form of the verb; yet, like the Malayan and Polynesian dialects, it has two forms for the plural of the first personal pronoun, one including and the other excluding the person addressed. The vocabulary is distinct from both the Philippine and the Polynesian dialects.

The natives of Guam are descended from aboriginal inhabitants of the group, from Mexican soldiers and Filipinos brought to the island by the Spaniards, from Spaniards, and from British and French mariners who settled in the islands and married natives. It is interesting to find among the principal families the names Anderson, Roberts, and Wilson, the bearers of which are true Chamorros in heart, language, and manners.

W. E. SAFFORD, U. S. N.

Seneca Archeological Collection.—The Section of Archeology of the American Museum of Natural History has received an exchange from the Buffalo Society of Natural Sciences, consisting of a representative collection from a village site in the southern part of Buffalo. This site was inhabited in historic times by the Seneca Indians, at whose head was the famous chief Red Jacket. In prehistoric times the same site was occupied by the Kah-Kwahs, another division of the Iroquois people who spoke a related language and had kindred customs. In the early days this site was neutral ground because it was near a quarry of chert, the material which all tribes alike needed for making arrowpoints. When the Seneca, however, secured guns and no longer used chert-pointed arrows, they captured the site from the Kah-Kwahs, an event which took place early in the seventeenth century. The present collection was made by Mr Frederick Houghton, principal of one of the Buffalo schools, and is very complete. The implements represent both the early Seneca occupancy, down to the time when objects of European manufacture began to be received in trade, and that of the prehistoric Kah-Kwahs, and are accompanied by full information regarding the circumstances of their finding and their probable use.

HARLAN I. SMITH.

The Sherman Anthropological Collection of Holyoke, Massachusetts.—The belief that it is to the interest of anthropologists to be in touch with all available anthropological material is my excuse for calling attention to the collection purchased last July by the Scientific Society of Holyoke. Mr Gardner M. Sherman, of Springfield, Massachusetts, who made the collection, wishing to place the results of some twenty-five years' work, undivided, into hands that would properly care for them when he could no longer do so, offered his collection at a nominal sum to the Holyoke Scientific Society. An invitation from the Society to look over the collection before it was purchased was extended to me through Mr J. T. Draper, Head of the Science Department of the Holyoke High School. The collection, which is at present housed in the High School, and in the care of Mr Draper, will probably be installed eventually in the new Public Library building, now nearing completion.

Mr Sherman has been an indefatigable worker in the field, and has supplemented his own finds by exchanges and judicious purchases until the collection now numbers from 12,000 to 16,000 specimens. The material is confined almost wholly to American archeology. Arranged geographically, it covers Alabama, Arizona, Arkansas, Georgia, Illinois, Indiana, Kentucky, Massachusetts, Michigan, New Hampshire, New Jersey, New Mexico, North Carolina, Ohio, Rhode Island, South Carolina, Tennessee, Virginia, Washington, West Virginia, and Wisconsin, besides Africa, Canada, Denmark, Hawaii, and Mexico. Massachusetts, Georgia, Illinois, and Tennessee are the largest contributors. As might be expected, the Connecticut River valley is particularly well represented. The series of forty-eight Indian pipes would compare favorably with the same number in any museum. Of gorgets, there is an array of about one hundred from various states. The banner-stones number twenty-two. Pestles measuring from 16 to 27 inches in length are not uncommon.

Most of the pottery came from mounds at Clarksville, Montgomery county, Tennessee. An especially interesting specimen is a cooking pot from Erie county, New York, found with three heating stones in it. The collection as a whole is remarkable for the care with which every specimen was chosen. The purchase of such an excellent nucleus for a museum of anthropology places Holyoke in a most commendable position among cities of her class. No student of the archeology of the Connecticut River valley can afford to miss seeing the Sherman collection.

GEORGE GRANT MACCURDY.

Archeology at Phillips Academy.—As previously announced in these pages, Phillips Academy, of Andover, Mass., has recently es-

tablished a department of archeology with an endowment fund sufficient to conduct the work which it has immediately planned, to build a museum, etc. The young men of the school are interested, there already being twenty-seven in the class of archeology, as well as five assistants at work in preparing the collections for exhibition. The plan of the museum is not to conduct extended explorations or to make large purchases of collections, as such work is being done by the great museums of the country. The researches at Andover are toward a study of types of prehistoric archeology proper. This important branch of the science is sometimes neglected by many of the great museums; indeed, they are too busy in organizing and conducting extensive ethnological field expeditions to all parts of the world to do more than to publish an occasional memoir on the archeological results accomplished. It will thus be seen that the work being prosecuted at Phillips Academy is unique—being solely along the lines of prehistoric American archeology. Although its collections now number nearly 40,000 objects, the museum is in need of unfinished forms in slate, stone, bone, shell, and clay, as well as potsherds, and duplicates of every sort. Specimens of this character are earnestly solicited from museums and private collectors. Arrangements will be made to pay transportation, and all gifts will be promptly acknowledged and mounted in the name of the donor.

WARREN K. MOOREHEAD, *Curator.*

The Skqomish Tribe and Language of British Columbia is the subject of a paper read by Mr C. Hill-Tout at the Bradford meeting, 1900, of the British Association for the Advancement of Science, the report of which has recently appeared. The essay deals more with the ethnology and mythology of that interesting body of Indians than with their language, although a considerable vocabulary (pages 513-518) is given. The Skqomish language is one of the western dialects of the Salishan stock and is at present spoken by fewer than 200 people, who occupy the banks of Skwamish river and the shores of Howe sound, which forms its outlet. The Indian villages that formerly existed on English bay, Burrard inlet, and False creek, were not true Skqomish, but the language of this people was once spoken by a larger number of Indians than at the present time. After treating of birth, marriage, puberty, and death customs, the author describes the garments, dwellings, dances, wars, food, and other subjects pertaining to the tribe. Among the mythic stories and tales given are: "The Quais Brothers," "Tsáyanuk," "The Son of the Bright Day," "The Serpent Slayer," "The Deserted Youth," and "Sqeils the Copper Man."

A. S. GATSCHEP.

Fording in China.—Mr Hunter Corbett of Chefoo, China, writing regarding the primitive methods of travel and transportation about Chefoo, says that he was traveling in a mule litter and came to a stream which had overflowed its banks. A contract was made with the village people to transport him, his bedding, and belongings across the stream. The mules were made to swim, and the bedding and other impedimenta were done up in small parcels and carried by the tallest men, whose heads were just above the water, holding the parcels with their outstretched arms. They then brought a large earthen water-vessel, almost as deep as a flour barrel, but smaller inside. Mr Corbett was made to stand in this vessel floating in the water, surrounded by as many of the tallest men in the village as could get a hand on the rim. In this way the vessel was steadied and kept above the water and the wide stream crossed at a snail's pace.

O. T. MASON.

THE ARCHEOLOGICAL INSTITUTE OF AMERICA has established a traveling fellowship for researches in Central America, and Mr Alfred M. Tozzer, who was last year a graduate student at Harvard, has been appointed to the fellowship. After a field experience of two seasons in California and New Mexico, Mr Tozzer has gone to Yucatan for the purpose of studying the language and customs of the Mayas, preliminary to a study of the Maya hieroglyphs and with the hope that there may possibly be some tradition which will give a clue to some of the glyphs. The Institute committee on the fellowship consists of Mr Charles P. Bowditch, Prof. F. W. Putnam, and Dr Franz Boas.

DR POMMEROL.—François Pommerol, who died August 26, 1901, aged sixty-one years, was physician, archeologist, and folklorist. In the various anthropological and folklore journals of France Dr Pommerol published a large number of articles dealing with the prehistoric anthropology, traditions and folklore, language, etc., of the Auvergne,—the Limagne region of the Puy-de-Dôme in particular. His interesting collections were left by his will to the city of Clermont-Ferrand. At the time of his death he was engaged on a work dealing with the Quaternary formations of the Limagne. Dr Pommerol was a native of the Puy-de-Dôme and a pupil of Broca.—A. F. C.

PROFESSOR MARILLIER.—As a result of a catastrophe at the mouth of the river Tréguier in Brittany, in August, 1901, Leon Marillier and his entire family lost their lives. The death of Professor Marillier, who was thirty-nine years of age, occurred in October from pleurisy, incurred in the attempt to rescue his wife and children. He was the editor of the *Revue de l'Histoire des Religions* and the author of several ethnologic and ethnographic works, the best known being *La survivance*

de l'âme et l'idée de justice chez les peuples non-civilisés. Madame Marillier was the sister of Anatole Le Braz, the Breton litterateur, and herself an authority on the folklore of Brittany.—A. F. C.

CENTRALBLATT FÜR ANTHROPOLOGIE.—Dr G. Buschan, editor and publisher of the *Centralblatt für Anthropologie*, which has concluded its sixth volume, has begun the current year by making his journal assume an international character. It is now known as the *Internationales Centralblatt für Anthropologie und verwandte Wissenschaften*. The size of the journal has been increased, and its contributors include many distinguished German and foreign names. Dr Buschan has entire charge of the *Internationales Centralblatt*. The subscription price remains the same as hitherto—twelve marks (\$3.00).—A. F. C.

MME CLÉMENCE ROYER died at Paris, February 5, aged seventy-two years. She first became known to the French reading public by her translation, in 1862, of Darwin's *Origin of Species*, to which she prefixed what is regarded as one of the most famous essays of contemporary French thought. She was also the author of *Le Bien et la Loi Morale* (1881), of *La Constitution du Monde* (1900), and of numerous memoirs on anthropology and archeology. In 1900 she was awarded the cross of the Legion of Honor which had been solicited for her by several eminent scholars five years before.

PROFESSOR REGAZZONI.—On June 30, 1901, with proper municipal and academic ceremonies, a bust of Prof. Innocenzo Regazzoni, curator of the town museums and an authority on prehistoric archeology, was unveiled at the Lyceum of Como, Italy. The bust, which is appropriately inscribed, was voted by the municipal authorities as a monument to the labors of the deceased scholar, and the mayor officiated at the ceremonies.—A. F. C.

RUSSIAN SCHOOL OF SOCIAL SCIENCES AT PARIS.—On November 14 1901, there was inaugurated, at Paris, L'École russe des sciences sociales. The chair of anthropology in this new institution has been confided to M. Th. Volkov, the well-known ethnographer, who is also associate editor of *L'Anthropologie*.

MR EDMUND WILLIAM SMITH, archeological surveyor of the Northwestern Provinces of India, died of cholera on November 21 last, aged forty-three years. He had an important work in preserving the archeological remains and in publishing descriptions and drawings.

DR NOËL BALLAY.—Announcement is made in the last issue of *L'Anthropologie*, of the recent death, in Senegal, of Dr Noël Ballay, governor-general of West Africa, who had been an active contributor to the Musée d'Ethnographie at Paris.

FIELD COLUMBIAN LECTURES.—Of the course of Saturday lectures on Science and Travel at the Field Columbian Museum, Chicago, during March and April, the following are of anthropologic interest: March 8, The Sun Dance of the Cheyenne and Arapaho, by George A. Dorsey; April 19, Recent Explorations in Prehistoric Hopi Ruins, Arizona, by C. L. Owen; April 26, The Crow Indians of Montana, a Western Plains Tribe, by C. S. Sims.

PRIZES OF THE PARIS ANTHROPOLOGICAL SOCIETY.—The Prix Godard has been awarded for 1901 to M. Th. Volkov for his work on *Le pied chez l'Homme et les Mammifères*. The Prix Bertillon has been divided between Prof. W. Z. Ripley for his volume on *The Races of Europe*, and M. Cauderlier for his work on *Les lois de la population*.

AMERICAN MUSEUM.—Mr Arthur Curtiss James has purchased and presented to the American Museum of Natural History, New York, the Bashford Dean collection of Ainu objects. The Museum has also received from W. Jochelson, of the Jesup North Pacific Expedition, his Koryak collection from Siberia, consisting of twelve hundred pieces.

DR FRANZ BOAS, professor of anthropology in Columbia University, curator of anthropology in the American Museum of Natural History, and a member of the editorial board of the *American Anthropologist*, has been elected an honorary member of the Anthropological Institute of Great Britain and Ireland.

THE PUBLIC PRESS announces the recent gift by the Duc de Loubat, who has done so much for American archeology, of an annuity of 6000 francs to the Collège de France for founding a chair of American antiquities. The Duke has been elected a member of the Academy of Inscriptions.

DR MAX UHLE, Hearst lecturer in anthropology and director of the excavations and explorations in Peru of the University of California, has recently given three lectures in German on Peruvian culture and antiquities.

BY THE WILL of Mrs C. S. Warren, the sum of five thousand dollars is given to Harvard University for the Peabody Museum of American Archeology and Ethnology.

PROF. J. H. MARSHALL, who has been engaged in archeological researches at Athens, has been appointed director-general of the Archeological Survey of India.

DR LETOURNEAU.—The death of Dr Ch. Letourneau, general secretary of the Société d'Anthropologie de Paris, has been announced.

A PROMISING Anthropological Club has recently been organized at Yale University.

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ECONOMIC MAN—A DEFINITION

By ALBERT ERNEST JENKS

When an Ojibwa dies in northern Minnesota, even today, his clothing, a few pairs of moccasins, a blanket, a pipe and a tobacco pouch, a *mide* skin (his sacred medicine-bag), and his gun, with, perhaps, a dog or two, are buried with him; they are virtually all the property he possesses. We are now witnessing an American citizen give away his chattels, almost daily, in blocks of ten thousand, one hundred thousand, a million, and even ten million dollars, vainly striving to distribute his possessions before he dies. Great as are the gaps between the primitive American and the modern American in their beliefs and practises of the esthetic and mechanical arts, of socialization, of language, and of wisdom, the difference between the two is nowhere more marked than it is in the realm of material possessions.

This wonderful change from the primitive man with his fire, shelter, clothing, weapons, and tools — all of which he alone could move from twenty-five to one hundred miles in a single day — to the man in our own city with property-interests of millions scattered through a dozen states, is due to the rise, development, and predominance of what may be called the economic sense.

Economic sense expresses itself in a unique mental attitude toward consumable goods. It is the invariable possession of the economic man—it is the mark of the economic man.

The fundamental idea in the mortuary sacrifices of the Ojibwa is the destruction of property. To avoid discontent, dissention, and quarrels over the disposition of the property of the deceased, that property is destroyed; no weight is given to the fact of the continued productiveness of property. Mr Carnegie, while likewise seeking to avoid possible dissatisfaction and complications at the disposition of his property at death, has foremost in mind the continued productiveness of that property.

The morning mists of time hang heavy around the beginnings of most things human, but it is believed possible so to define economic man that he will be separable from natural man preceding him. Let economic man be defined as one who, for future gain, produces or traffics in consumable goods; and let natural man be defined as one who produces to satisfy only immediate wants. A word explaining the term *future gain*, as here used, may not be out of place: It means a gain of more than is necessary to continue life at the same level. Production or traffic for the purpose of future gain is a purposeful effort to raise the standard of life. Early in human society material possessions became the sesame which opened the way to life on a higher level, and production and traffic for the purpose of future gain is a determinate effort put forth to acquire such possessions.

The line thus drawn between natural man and economic man also forever separates economic man from the animals when he is considered with them in relation to consumption, and this line is the first that can be drawn separating them when they are so considered. Production or traffic for future gain is the first distinctively human attitude toward consumable goods.

In the last analysis, production—the fundamental and eternal process of economics—is the volitional stretching forth of a member or organ of one's body, and the taking or possessing

of the desired object. Thus, the higher animals are truly producers.

As a step higher, we notice that many animals show a strong natural instinct akin to that of possessory right. Possessory right means two things: First, the ability to recognize an object as one's own, and, second, the power to defend the ownership. These characteristics are exactly those a dog shows regarding his meal of bone, that cattle show in fighting for their accustomed stalls, and that birds exhibit in defending their nests, and even their nesting-places, with their lives. Darwin says that a monkey in the London Zoölogical Gardens used a stone to crack nuts with, since his teeth were weak; and when he had finished each meal, he carefully laid the stone under the straw of his enclosure and kept all other monkeys from appropriating it.¹

In the next higher stage or phase of economic activity, that of gathering and saving during a period of plenty against a time of need, many of the higher and even lower animals rival, nay, frequently outstrip, natural man. Among these may be recalled squirrels, beavers, birds, ants, bees, and some carnivora.

The animals produce and protect their shelters and housings; they accumulate, store, and defend relatively large supplies of food for consumption by themselves or their progeny during periods of scarcity or weakness. Man shares with the animals in these phases of positive, though incipient, economic expression; but he alone has left these stages and developed a higher form. He produces, has proprietary right in his productions, and accumulates goods in store, but he alone produces with a purposeful effort for future gain, and he alone traffics or exchanges his possessions with another by freewill contract. When this stage is reached, economic sense is safely developing, and man is on the pathway to material success.

In defining economic man as one who produces or traffics for

¹ Darwin, *The Descent of Man and Selection in Relation to Sex*; 2d ed., revised and augmented with illustrations, N. Y., 1898, p. 83.

future gain, we place him at the beginning of modern culture. Prof. Albion W. Small has said that modern culture consists of health, wealth, sociability, knowledge, beauty, and righteousness. Of course, in modern culture these six essentials come not in the greatest quantity to the greatest number, but they come in the greatest quantity possible to all. During the period of time when a family produced each season from its immediate environment only its own stock of goods consumed, when nearly every day was spent in procuring adequate food, clothing, shelter, and protection from warring men, it was manifestly impossible for anything marking the beginning of modern culture to exist. As soon, however, as man produced and stored away the necessities of even simple life, — stored them, not for consumption during a time of scarcity, but for consumption during a period of plenty, or for traffic, — then it was that the genius of progress flickered like a feeble flame, flickered and grew bright in the human brain.

Leisure, with a healthy incentive to activity, is absolutely essential to modern progress. Leisure did not come to man, and could not come, until necessities were supplied for a certain period of the future; the healthy incentive for constant activity did not appear until the time of production or traffic for future gain — such gain was, in fact, the first incentive to constant activity, and still is the chief one. Thus, production for future gain gave leisure; and accumulating for future gain was an ever-increasing mainspring to keep man producing. Leisure to produce and incentive to produce are the two great ever interacting and reacting essentials to production.

With these essentials given, freedom from the constant menace of starvation found man ripe for better health; he was already beginning to acquire wealth; the time was auspicious for friendly socialization; such intercourse fertilized the seeds of human knowledge; and all of these gave men better and constantly changing standards of beauty, right, and justice.

There are two socio-economic institutions found among primi-

tive people, each of which, then, may originate, develop, and advance economic man: These are production and traffic. Production is not only the most important of these institutions, but it is the one absolutely indispensable to economic manhood.

Agriculture and zoöculture, as commonly understood, are the two aboriginal productive enterprises which are at once seen to come within the definition of activities carried on for the purpose of future gain. When a quantity of maize or other seed, of roots or tubers, is laid aside at harvest time, is conserved, and planted at a future seeding, the dominating purpose is that of future gain. It is a purpose steadfast enough to evolve an agricultural people from a more lowly tribe. It must be a steadfast purpose in order, in the teeth of hunger, to save the yearly supply of seed. When hunger once forced a primitive agricultural or zoöcultural community to consume its last domesticated seed or animal, merciless blight wasted away the people until their numbers were so small that they could again find sustenance from the natural and spontaneous products of their country.

In agriculture and zoöculture Nature aids man as she does in no other productive enterprise, since reproduction and growth mean, in essence, nothing but future gain. Whether the gain is twofold or two-hundredfold, animals or plants reserved from immediate consumption for the purpose of increase are sure indexes of economic man. But when these cultivated products are kept in store by man in greater quantity than is necessary to sustain life during time of natural scarcity, man's economic sense is well established, since he lacks only needy consumers who will buy, to make him not only producer but trafficker and money-earner.

Traffic, in the form of barter, is the forerunner of commerce. Traffic, whether barter or commerce, is the result of a psychic condition—a desire to raise one's standard of life by gaining the article that passes in trade. Thus traffic is egocentric, first and last; but its law of development is, first, centripetal, and, later, centrifugal. Commercially considered, man first traded,

primarily, to get for himself the article another possessed, and he gradually came to trade with the desire to supply what the other party wanted. This latter condition developed with great rapidity when a medium of exchange, more or less a standard of value, came to play its part in the transaction of traffic over an area occupied by people of different culture-grades, or by people whose products were dissimilar. Today the dominant force of the superior nation in commerce is the desire to supply the wants of other people; and, in the common mind, that nation is commercially the most successful whose balance of trade shows the largest value of exports in comparison with the value of its imports.

PROVISIONAL LIST OF LINGUISTIC FAMILIES,
LANGUAGES, AND DIALECTS OF MEXICO
AND CENTRAL AMERICA

By CYRUS THOMAS

The following list of linguistic families, languages, and dialects of Mexico and Central America is presented with no higher claim to attention than that of a merely tentative basis for future studies. It is in no sense the outcome of original linguistic work, but simply the result of careful examination of existing data. Somewhat similar lists of languages of the same region have been repeatedly compiled, but since those published by Orozco y Berra, in 1864, those in Dr Brinton's *American Race* (1891) are the only ones accompanied by sufficient data—geographical positions and linguistic relations—to be identified with certainty. The list is presented primarily as a basis of comparison, but with the hope that any errors therein which can clearly be shown may be pointed out by students of philology. In this way an approximately correct and acceptable classificatory list may be obtained.

This list includes some languages and dialects of the genuineness of which there is considerable doubt; these are indicated by an interrogation point. Some two or three, where the relation is doubtful, have been included in families to which they are presumed to belong, though the evidence is not conclusive; these are followed by a star. This method has been adopted because explanations could not well be given in the list.

ATHAPASCAN

APACHE.—In northern Mexico, chiefly in Chihuahua, Sonora, and Durango.

TOBOSO.—In northern Mexico, chiefly in Coahuila, Durango, and Chihuahua. (Extinct.)

CARIBBEAN (Modern)

MORENO.—(The only dialect determined.) Along the northern coast of Honduras.

CHIAPANECAN

CHIAPANEC.—In Chiapas.

DIRIAN.—In Nicaragua, south side of Lake Managua.

MANGUE.—In Nicaragua, west and north of Lake Managua.

OROTINAN.—In Costa Rica, on the Gulf of Nicoya.

CHIBCHAN

GUATUSO.—In northern Costa Rica, about the Rio Frio.

GUAYMIE.—In Panama, from Chiriqui lagoon to Chagres river.

Dialects: GUAYMIE
MUOI
MURIE
NORTENO
SABANERO
VALIENTE.

GUETARE.—Extending north and south through central Costa Rica.

Dialects: QUEPO
SUERRE?
VOTO (or BOTO).

(The following are usually grouped under the generic or sub-family name, Talamanca:)

BORUCA (or BRUNCA).—In southeastern Costa Rica.

BRIERI.—In southeastern Costa Rica.

Dialects: CABECAR
CHIRIPI (or TARIACA?)
ESTRELLA
TUCURRIC.

COTO?—On the headwaters of the Rio Grande Terraba, Costa Rica. (Extinct.)

TERRABA.—In southeastern Costa Rica.

Dialect: TIRIRI.

CHINANTECAN

CHINANTECO.—In Chinantla, northeastern Oaxaca.

COAHUILTECAN

A generic term embracing languages and dialects which are nearly all extinct and their relations unknown. Three only have been determined, as follows:

COMECRUDO.—On the lower Rio Grande.

COTONAME.—On the lower Rio Grande.

PINTO or PAKAWA.—On the lower Rio Grande.

CUNAN

CUNA.—From the Gulf of Uraba and Rio Atrato on the east to the Rio Chagres on the west, Panama.

DORASKEAN

CHALIVA?—On upper Changuinula river, Panama.

CHANGUINA.—Near Bugaba, Panama.

CHUMULU.—Near Caldera, Panama.

DORASQUE.—On the Rio Puan, Panama.

GUALACA.—Near San Francisco de Dolega, Panama.

RAMA.—About Blewfields lagoon, southeastern Nicaragua.

TELUSKIE?—Near the Rio Puan.

HUAVEAN

HUAVE.—On the Isthmus of Tehuantepec, on the Pacific coast.

LENCAN

LENCA.—In Guatemala, Honduras, San Salvador, and Nicaragua.

Dialects: CHALINGA?—In eastern San Salvador.

GUAJISQUERO.—In central Honduras.

INTIBUCAT.—In central Honduras.

OPATORO.—In central Honduras.

PUPULUCA (*b*).—On the Rio de la Paz, southeastern Guatemala.

SIMILITON.—In central Honduras.

MATAGALPAN

MATAGALPA.—Chiefly in Matagalpa and Segovia, Nicaragua.

Dialect: CACAOPERA.—At Cacaopera and Lislique in northeastern San Salvador.

MAYAN

ACHIS?—Formerly in western Guatemala. (Extinct.)

AGUACATECA.—In Aguacateca, central Guatemala.

CAKCHIKEL.—In southern Guatemala.

Dialect: PUPULUCA (*a*).—Near Antigua, Guatemala.

CHASABAL.—In eastern Chiapas.

CHICOMUCELTECA.—In southern Chiapas.

CHOL.—In eastern Chiapas and northern Guatemala.

CHONTAL (of Tabasco).—In eastern Tabasco.

CHORTI.—In the valley of the Rio Motagua, eastern Guatemala and western Honduras.

CHUHE.—Near Jacaltenango, western Guatemala.

HUASTECA.—On the Rio Panuco, northern Vera Cruz, Mexico.

IXIL.—In central Guatemala.

JACALTECA.—Adjoining the Chuhe, western Guatemala.

KEKCHI.—On the Rio Cahabon, Guatemala.

KICHE.—In southern Guatemala.

MAM.—In western Guatemala.

MAYA.—In Yucatan, Campeche, and northern Guatemala.

Dialects: IYZA (of Peten).—Northern Guatemala.

LACANDON.—On upper Usumacinta river.

MOPAN.—Northern Guatemala and central Belize.

MOTOZINTLECA.—In eastern Chiapas.

POKOMAM.—In southern Guatemala.

POKONCHI.—In central Guatemala.

SUBINHA?—Locality not given, probably eastern Chiapas.

TZENTAL.—In Tabasco and Chiapas.

TZOTZIL.—In northern Chiapas.

TZUTUHIL.—Southern shore of Lake Atitlan, Guatemala.

USFANTECA.—Adjoining the Pokonchi on the west.

NAHUATLAN

ACAXEE.—In the Sierra de Topia, Sinaloa and Durango.

AZTEC.—Chiefly in the valley of Mexico, but extending from Tabasco on the east coast to Sinaloa on the west coast.

Dialects: MEZTITLATECA.—In the sierra of Mexitlan, state of Mexico.

CUITLATECO.—In Guerrero.

TEZCUCAN.—In the valley of Mexico.

CAHITA.—In Sinaloa.

Dialects: MAYO.—On Rio Mayo, Sinaloa.

TEHUECO.—On Rio del Fuerte, Sinaloa.

VACOREGUA.—On Rio del Fuerte, Sinaloa.

YAQUI.—On Rio Yaqui, Sinaloa.

CORA.—In Sierra Nayarit, Jalisco.

Dialects: HUICHOLO.—In northeastern Jalisco.

TEPECANO.—In northeastern Jalisco.

NIO.*—On the southern border of the Cahita area. (Extinct.)

NIQUIRAN.—Between Lake Nicaragua and the Pacific, Nicaragua.

OPATA.—On the headwaters of Yaqui river, Sonora and Chihuahua.

Dialects: EUDEVE.—In Sonora.

JOVA.—In western Chihuahua.

PIMA.—In Sonora, Chihuahua, and Sinaloa.

Dialects: BAMOA.—In Sinaloa.

POTLAFIGUA.—Along the northeastern border of the Opata area.

PIPIL.—Chiefly on the Pacific coast in Guatemala and San Salvador.

Dialects: ALAGUILAC?—On the Rio Motagua, Guatemala. (Extinct.)

TLASCALTECA.—In San Salvador.

SABAIBO.—Adjoining and related to the Acaxee.

SIGUA.—On Chiriqui lagoon, Costa Rica. (Extinct.)

TARAHUMARI.—In Sonora, Chihuahua, and Durango.

Dialects: GUAZAPARE.—In the southeastern part of the Tarahumari territory.

PACHERA.—In the central part of the Tarahumari territory.

TUBAR.—Near the Guazapare.

VAROGIO.—Near the Guazapare.

TEBACA.—Adjoining and related to the Acaxee.

TEPAHUE.—In Sonora. (Extinct.)

Dialects: CAHUIMETO. (Extinct.)

MACOYAHUY. (Extinct.)

TEPEHUAN.—In Durango.

TLASCALAN.—In Tlascala. (Dialect of the Aztec.)

XIXIME.—Adjoining and related to the Acaxee.

ZOE.*—In Sinaloa. (Extinct.)

Dialect: BAIMAMA.—Adjoining the Zoe. (Extinct.)

OTOMIAN

JONAZ or MECO.—In Guanajuato. (Probably extinct.)

MATLALTZINCO or PIRINDA.—In the states of Mexico and Michoacan.

MAZAHUA.—About the southwestern border of the valley of Mexico.

OTOMI.—Throughout central Mexico.

PAME.—In Queretaro and Guanajuato.

PAYAN

PAYA.—In northeastern Honduras.

SERIAN

GUAYMA.—On the north bank of the lower Río Guaymas, Sonora. (Extinct.)

SERL.—On Tiburon island and the opposite mainland, Sonora.

TEPOKA.—On the mainland opposite Tiburon island. (Extinct.)

UPANGUAYMA.—Adjoining the Guayma. (Extinct.)

SUBTIABAN

SUBTIABA (or NEGRANDAN).—In the region of the present city of Leon, Nicaragua.

TARASCAN

TARASCO.—In the state of Michoacan.

TEQUISTLATECAN

TEQUISTLATECA (or CHONTAL OF OAXACA).—In Oaxaca, on the Pacific coast.

TOTONACAN

TOTONACA.—In northern Vera Cruz and northeastern Puebla.

Dialects: CHAKHUAXTI.—In the pueblos of Xalpan and Pontepec.

IPAPANA.—?

TATIMOLO.—In Naolingo.

TEPEHUA.—On the Puebla border.

TETIKILHATI.—In the Sierra Alta.

ULVAN¹

COCO.—On Segovia river, which forms the boundary between Honduras and Nicaragua.

CUKRA.—On Blewfields river, Nicaragua.

MELCHORA.—On Río Rama, Nicaragua.

MICO.—On Blewfields river, Nicaragua.

¹ The list of dialects of this family and the classification as here presented are in part at least unreliable, but are given after Brinton (*American Race*) as the fullest notice that has been published.

PANTASMA.—On upper Segovia river, Nicaragua.

PARRASTAH.—On Blewfields river, Nicaragua.

SIQUIA.—On upper Blewfields river, Nicaragua.

SUBIRONA.—On Segovia river.

TOACA (TOWKA, or TWAKA).—In eastern Nicaragua.

ULVA (WOOLWA, or SMOO).—On Blewfields river, Nicaragua.

XICACQUEAN

XICACQUE (or JICACQUE).—In northern Honduras.

Dialects: XICACQUE OF YORO.—In the Yoro district.

XICACQUE OF PALMAR.—In the northern part of Santa Barbara district.

XINCAN

XINCA.—On Rio de los Esclavos, southeastern Guatemala.

Dialects: JUPILTEPEC, JUTIAPA, and SINACANTAN.—Spoken at pueblos of the same names respectively.

YUMAN?

COCHIMI.—In Lower California.

COCOFA (COCAPA).—At the mouth of the Rio Colorado, Sonora, and Lower California.

GUIACURA.—In Lower California.

PERICU.—In Lower California. (Extinct.)

ZAPOTECAN

AMISHGO.—In Guerrero.

CHATINO.—In the district of Jamiltepec, Oaxaca.

CHOCHO (CHUCHON).—In the district of Coixtlahuaca, Oaxaca.

CUICATECO.—In the district of Cuicatlan, Oaxaca.

MAZATECO.—In the district of Cuicatlan, Oaxaca.

MIXTEC.—In Oaxaca and Guerrero.

POPOLOCA (of Oaxaca).—The same as Chocho.

SALTECO.—In Oaxaca.

TRIKE.—In Tehuantepec.

ZAPATECO.—In Oaxaca.

ZOQUEAN

MIXE.—In Oaxaca and Isthmus of Tehuantepec.

POPOLOCA (of Puebla).—At and in the vicinity of Oluta.

TAPIJULAPAN?—On Río de la Sierra.

ZOQUE.—In Tabasco, Oaxaca, and Chiapas.

Dialect: CHIMALAPA.

UNCLASSIFIED

CAZCAN.—In Zacatecas and Jalisco. (Extinct.)

Related Dialects: TECUENE.—In Jalisco. (Extinct.)

TEULE.—In Jalisco. (Extinct.)

CONCHO.—In northern Chihuahua; said by early missionaries to have been Nahuatlan. (Extinct.)

GUACHICHIL.—In Nuevo Leon, San Luis Potosi, and Zacatecas. (Extinct.)

GUATJIAGUA.—At Guatjiagua, eastern San Salvador; probably a dialect of the Lenca or Xinca.

IRRITILA.—Chiefly in Durango. (Extinct.)

MUSQUITO.—Along the gulf coast of Nicaragua.

OLIVE.—In southern Tamaulipas. (Extinct.)

PISONE.—See XANAMBRE.

TAMAULIFEKO.—Apparently a collective term including various idioms, some unrelated. In Tamaulipas. (Extinct.)

XANAMBRE and PISONE.—In Tamaulipas and Nuevo Leon. (Extinct.)

ZACATECO.—In Zacatecas. (Extinct.)

Memoranda

Coahuiltecan is not to be taken as a true linguistic family or stock name, as the Coahuilteca of Orozco y Berra, on which it is based, is in fact geographical, embracing languages of different stocks, but the data are too meager to justify an attempt at classification.

I have concluded it best to drop Brinton's stock name *Changuina*, and substitute therefor *Doraskean* or *Dorasquean*, as

this follows Pinart's classification which precedes that by Brinton, and is based on the name of the chief subtribe.

In the *Lencan* family the Chalinga is based on a few words obtained by Karl Sapper. As these are not sufficient to determine its relation to other dialects of the family, it must be considered as inserted tentatively. It may be possible that the Chontal element, assigned by Dr Brinton¹ to the Lencan stock on the statement of Desire Pector, spoke a different dialect from either of those mentioned in the list, but the evidence is not sufficient to justify inserting the name.

I have assigned *Papuluca* (*a*) (Mayan family) to the position of a dialect of the Cakchikel. In fact the name should be dropped, as the language is nothing more than the Cakchikel.

Chicomucelteca (Mayan family) is, according to Sapper, a dialect of the Huasteca, but the vocabulary he gives in his *Mittel Amerika* does not make this satisfactorily clear.

Subinka (Mayan family). It is doubtful whether this should be given as a dialect.

Nio (Nahuatlan family). This is inserted in this family tentatively as its relations are not definitely known.

Alaguilac (Nahuatlan family). I am of the opinion that this was nothing more than simple Pipil; and the same is probably true of Tlascalteca.

Zoe (Nahuatlan family). The remark under *Nio* also applies here.

Totonacan (family). The evidence regarding the dialects given under this family name is unsatisfactory, except that relating to the Tepehua. Moreover, there seems to be some doubt, if these are all retained, whether we are to understand that there is in addition a Totonaca (proper).

Uluan (family). There is still much confusion and uncertainty in regard to the dialects of this family group which I am unable to straighten out with the data at hand.

¹ *American Race*, p. 149.

NEGRO COMPANIONS OF THE SPANISH EXPLORERS¹

BY R. R. WRIGHT

The fact seems to be well established that Negroes were introduced into the New World with the first discoverers and explorers. Indeed, there is evidence which leads to the surmise that some of the pre-Columbians may have been Negroes. Peter Martyr, a learned historian and an acquaintance of Columbus, mentions "a region, not two days' journey from Quarequa's territory, in the Darien district of South America, where Balboa, the illustrious discoverer of the Pacific ocean, found a race of black men, who were conjectured to have come from Africa and to have been shipwrecked on this coast." In connection with this statement may be noted a report by the Bureau of Ethnology which describes "early American pottery with physiognomies of decided African lineaments."² The late Justin Winsor stated in a letter to the writer that "there is a possible chance that at some early time the ocean currents may have swept across from the Canaries and the African coasts canoes with Guanches and other African tribes from which some considerable strains of Negro blood may have mixed with the pre-Columbian peoples of tropical America. The skulls found in caves in the Bahamas seem to be very like those in the early burial places of the Canaries."

The good Bartolomé de las Casas, the "Protector of the Indians," is often charged with the introduction of Negro slavery into this continent.³ It is claimed that he introduced Negro

¹ The interest in this paper is enhanced by the fact that it is the result of research by a native of the race which took such a prominent part in the discovery and colonization of the New World.—EDITOR.

² Hays, *Spanish Conquest in America*, I, p. 360.

³ *Fourth Annual Report*, Bureau of Ethnology, p. 407.

⁴ Hays, *Spanish Conquest in America*, III, p. 210.

slaves to relieve the hard-worked natives, and it is charged that "at one inauspicious moment of his life he advised a course which has ever since been the one blot upon his well-earned fame, and too often has this advice been the only thing which has occurred to men's minds respecting him, when his name has been mentioned. He certainly did advise that Negroes should be brought to the New World." "I think, however," wrote Sir Arthur Helps, "I have amply shown in the *Spanish Conquest* that he [Las Casas] was not the first to give this advice and that it had long before been largely acted upon."¹ It is said again that Las Casas, as early as 1498, with his father, accompanied Columbus and was therefore familiar with the companions of the latter and especially with Ovando, the successor to the Discoverer in the government of the Indies. It was during the year 1501 that Columbus was deposed from the government of the Indies, and he may probably himself have been cognizant of the fact that Negro slaves had been introduced into the new Spanish possessions. But there seems to be no positive evidence either way as to the great admiral's attitude toward the introduction of African slavery into the New World. There is a letter of Columbus in which he refers to Negroes in Guinea, and it is known that he gave an Indian slave to Las Casas' father, but all beyond this seems to be mere surmise.²

The year 1501 is the date of the earliest reference in American history to Negroes coming from Spain to America.³ Sir Arthur Helps, in his *Spanish Conquest in America*, states that, in the year mentioned, instructions were given to the authorities that while Jews, Moors, or new converts were not to be permitted to go to the Indies or to remain there, "Negroes born in the power of Christians were to be allowed to pass to the Indies, and the officers of the royal revenue were to receive the money to be paid for these permits."⁴

¹ Helps, *Life of Las Casas*, preface.

² Ellis to Winsor's *Narrative and Critical History*, II, p. 304.

³ Helps, *Spanish Conquest*, I, p. 180. Irving, *History of Columbus*, III, p. 162.

⁴ Helps, *ibid.*

From this time forward Negroes were more or less familiar personages in the West Indies.¹ On September 15, 1505, King Ferdinand of Spain wrote to Ovando, then governor of Hispaniola, a letter of the following tenor: "I will send more Negro slaves as you request: I think there may be a hundred. At each time a trustworthy person will go with them who may share in the gold they may collect and may promise them ease if they work well." Some time prior to this, soon after he had become governor, Ovando had objected to the importation of Negro slaves into Hispaniola on the ground that "they fled among the Indians and taught them bad customs and never would be captured."²

In 1510, according to Antonio de Herrera, the royal historiographer to Philip II, King Ferdinand informed Admiral Don Diego Columbus that he had given orders to the officials at Seville that they should send fifty Negroes to work in the mines of Hispaniola.³ The next year, 1511, the king complained in language like this: "I do not understand how so many Negroes have died: take much care of them."⁴

Again, on September 27, 1514, King Ferdinand, in response to a request of the Bishop of La Concepcion, in Hispaniola, that more Negroes should be imported, said that there were already many Negroes and it might occasion inconvenience if more males of the race should be introduced into the island.⁵ There seems, therefore, to have been no cessation, but rather a yearly increase in the number of Negroes sent to the New World. On his accession to the Spanish throne, Charles V granted "license for the introduction of Negroes to the number of four hundred."⁶

¹ Holps. Navarrete, *Coleccion*, I, p. 233. Herrera, *Historia de las Indias*, dec. 1, lib. 5. Irving, *History of Columbus*, III, p. 162.

² Holps, *Spanish Conquest*, I, p. 219 (Coleccion de Muñoz, MS., tomo 90).

³ Herrera, *Historia de las Indias*, dec. 1, lib. 5, cap. 12.

⁴ *Ibid.*, *Hist. West Indies*, Stevens' trans., I, p. 374.

⁵ Holps, *Spanish Conquest*, I, p. 245 (Coleccion de Muñoz, MS., tomo 90).

⁶ *Ibid.*, I, p. 491.

⁷ *Ibid.*, I, p. 505.

From this time onward the importation of Negroes into the West Indies became a considerable industry, and the monopoly was greedily sought by Cortés and more eagerly bestowed by King Charles in 1523.¹ There were sent to Hispaniola, 1500 (half of these males); to Cuba, 300; to Jamaica, 300, and 500 to the province of Costilla del Oro on the mainland.² By 1528 there were in the New World, according to Herrera's account of the Indies, nearly 10,000 Negroes. It is said that the treatment of the Negroes was injudiciously lenient; they had four months' holiday.³

In Honduras, in 1539, Francisco de Montejo sent a Negro of his, who knew the Indian language, to burn a native village.⁴ In 1554, in Peru, 30 Negroes accompanied a military force of 70 Spaniards, under Francisco Hernandez.⁵ In 1541, in Tolanite, a settlement in New Galicia, Mexico, the Indians killed a Negro, "de Bovadilla," perhaps the name of the owner, and robbed him of his cattle and hacienda—his establishment—and everything he had.⁶ On April 14, 1559, the *cabildo* or town council of Santiago de Chile, voted to grant a petition of one Tomé Vasquez, a free or enfranchised Negro, by allowing him possession of a lot of land in the town, provided this was found to be vacant and unclaimed.⁷ The wording of the record seems to show that Vasquez received precisely the same treatment as the white applicants for permission to settle in the town.

On St Luke's day, October 18, 1526, Lucas Vasquez de Ayllon died. According to Navarrete he was among the first to bring Negroes to the present confines of the United States.⁸ He explored our eastern coast and attempted to found a colony at San

¹ Helps, *Spanish Conquest*, III, p. 210 (Colección de Muñoz, MS., tomo 90).

² *Ibid.*

³ *Ibid.*, tomo 81.

⁴ Pacheco-Cardenas, *Colección de Documentos de las Indias*, II, p. 216.

⁵ *Ibid.*, III, p. 319.

⁶ *Ibid.*, III, p. 37.

⁷ *Colección de Historiadores de Chile*, Santiago, 1898, XVII, p. 66.

⁸ Shea in Winsor's *Narrative and Critical History*, II, 241.

Miguel de Gualdape, since known as Jamestown, Virginia.¹ In this colony, under his successor, a Porto Rican, the Negroes were so grievously oppressed that they arose in insurrection against their oppressors and fired their houses.² The settlement was broken up and the Negroes and their Spanish companions returned to Hayti, whence they had come. This ended the first introduction and the first insurrection of Negroes on our eastern shores. Thus Hayti, the place where Negro slaves were first introduced into the New World, was strangely enough the first to manifest an awful retribution against human slavery. It would be interesting to know what part Ayllon's fugitive Negroes, in the persons of their descendants, took in the dreadful revolution which swept over that island nearly three centuries later under the lead of Toussaint L'Overture, Dessalines, and their associates. A singular incident connected with Ayllon's expedition along this coast is the fact that he, with the assistance of his Negro slaves, built the first ships constructed on our coast. This fact is made more interesting when it is known that Vasco Balboa had with him some thirty Negroes who in 1513 assisted in building the first ships on the Pacific coast of America.

The introduction of Negroes into the western portion of the United States was about as early as the coming of the Spaniards. George Bancroft thinks that there was no part of the United States into which the Spanish explorers did not land Negroes. Cortés had with him three hundred Negro slaves in 1522.³ Under date of July 19, 1537, the governor of Mexico wrote: "I have written to Spain for black slaves because I consider them indispensable for the cultivation of the land and the increase of the royal revenue."⁴ Also Gustav Adolf Bergenroth, the collector

¹ Ibid. [For a discussion of the location of the settlement of San Miguel, see Lowrey, *Spanish Settlements within the Present Limits of the United States*, pp. 442-452.—EDITOR.]

² Ibid.

³ Prescott, *Conquest of Mexico*, III, p. 350.

⁴ Pascual de Gayangos, *Calendar of Spanish State Papers*, Col. V, p. 441.

of Spanish papers, has shown that Negroes at an early date were considered and called the "strength and sinew of the western world."¹ The Great Antilles especially had already been crowded with Negroes on the plea that they were sent thither with a view of facilitating the christianization, and to relieve the toil and suffering of the unfortunate natives²; but their advent into the western portion of America was fraught with a good deal of concern. Before 1530 there were enough Negroes in Mexico to warrant an attempt at self-liberation from the Spanish yoke.³ Their plan was to massacre the Indians friendly to the Spanish, form an alliance with the others, elect a ruler, and set up a government for themselves in the City of Mexico. H. H. Bancroft, speaking of this event, says that "the Negroes neither gave nor accepted quarter."⁴ Their enterprise, however, failed, the ringleaders being betrayed, captured, and executed. In this connection there is another interesting story of the followers of a certain Bayano, a Negro insurgent captured and sent back to Spain, whose followers in 1570 founded the town of Santiago del Principe.

There is, however, some reason for the belief that many of the Negroes imported by the Spaniards were not savages nor ignorant; that many of them were nominally Mohammedans or Spanish Catholics. One writer mentions his Mandingo servant who could write the Arabic language with great beauty and exactness.⁵ The Guinea or Gold-coast Negroes were bold, brave, and liberty-loving, as the history of the Pacific states will attest.

Bandelier says that the most interesting period in the history of the discoveries on the American continent was during that part of the sixteenth century when the efforts of the Spaniards were directed from the already settled coasts and isthmuses into the in-

¹ State Papers of Spain in British Museum, collected by Gustav Adolf Bergenroth. Revetus Enys to Secretary Sir Henry Burnet. Paper Col. Entry Bk., vol. XI, p. 82.

² Winsor, Letter to author, July 9, 1894.

³ H. H. Bancroft, *History of the Pacific States*, III, p. 384.

⁴ *Ibid.*, II, p. 385.

⁵ Bryan Edwards, *History of the British West Indies*, II, p. 72.

terior of both North America and South America. It was during this interesting period that certain Negroes connected with the Spanish explorers rendered conspicuous service on various expeditions.¹ Mr George Parker Winship mentions, in his *Coronado Expedition*,² a Negro slave of Hernando de Alarcon who, in the expedition of 1540, was the only one in the party who would undertake to carry a message from the Rio Colorado across the country to the Zuñis in New Mexico when Alarcon wished to open communication with Coronado.

In 1527, some time prior to Coronado's expedition to New Mexico and the buffalo plains, we are introduced to another Negro who was, perhaps, the most conspicuous of those who took part with the Spaniards in the early expeditions and discoveries on this continent. Reference is here made to him who was one of the four survivors of the ill-fated expedition to the New World made by Pamfilo de Narvaez who sailed from Spain, June 17, 1527, having received from King Ferdinand a commission as governor of Florida, Rio de las Palmas, and Espiritu Santo. This is the best authenticated case at hand, however, of a Negro participating in exploring this continent. Estevanico, or Estevanillo, the Negro here referred to, was most likely not the only Negro who accompanied Narvaez from Spain in 1527, but he was the only one whose identity has been made known. That he was the discoverer of the Zuñi Indians and of New Mexico is, I think, a fact now well known. It has often been claimed that Alvar Nufiez Cabeza de Vaca, the treasurer of the ill-starred expedition of Narvaez, was the discoverer of that country; but Bandelier has shown quite conclusively that Cabeza de Vaca never saw New Mexico, and that he was absent from the country at the time of the exploration of the New Mexican territory in 1539.³ The evidence which this authority adduces to show that the Zuñi In-

¹ Bandelier, Letter of February 4, 1900.

² Bureau of Ethnology, *Fourteenth Annual Report*, p. 406.

³ Bandelier, *Contributions to the History of the Southwestern Portion of the United States*, chap. IV.

dians and New Mexico were not discovered by Cabeza de Vaca is, in the opinion of the writer, equally conclusive against the claim of discovery by any other man than the Negro Estevanillo. Bandelier's historical researches show beyond doubt that only one of two men can possibly be credited with the discovery—Fray Marcos de Niza or his Negro guide and interpreter, Estevanillo, or Estevanico; for a careful reading of his own narrative does not reveal any evidence upon which the discovery can be attributed to Cabeza de Vaca.

The only claimant worthy of consideration against Estevanillo is the friar Marcos de Niza. Bandelier ably supports Fray Marcos' claim to the honor of the discovery, but this claim can certainly have no foundation except as it is based upon the fact of the guidance and information which Niza received from the Negro Estevanillo. While it is true, therefore, that Estevanillo disobeyed Niza's order to "stop and send messages," it is likewise a fact, supported by all authorities, that Estevanillo saw the territory of New Mexico some days before the arrival of the friar. According to the information, Fray Marcos followed days in the rear of his ambitious guide.

Later historians, in writing of this discovery, have not only ignored any right which Estevanillo, or Estevanico, had to the discovery, but have charged him with undue ambition and avarice. In writing of Fray Marcos, Cortés called the monk "a common impostor" and declared that he claimed to discover countries that he never saw. While it may not be proper to accept this wholesale charge, it is safe to say that Fray Marcos was too far in the rear of his Negro guide to lay claim to the discovery of New Mexico.

Fiske, in his *Discovery of America*, writes rather slightly, in our opinion, of this interesting episode of American history, laying particular stress on the "illo" or "ico" in Estevanillo's, or Estevanico's, name.¹ Although it would perhaps be improper to

¹ Fiske, *Discovery of America*, chap. IV, p. 500.

charge so distinguished a historian with flippancy in his reference to "poor silly little Steve,"¹ it would not, perhaps, be pretentious to suggest that the termination alluded to in Estevan's name does not warrant such a reflection on the man. Indeed, it seems clear that a fair interpretation of the facts related in Dr Fiske's work (II, pp. 500-508) would warrant the conclusion that a "man [Estevanillo] who visited and sent back reports of a country," is more entitled to the honor of its actual discovery than one who, according to Dr Fiske's own statement, "from a hill only got a Pisgah's sight of the glories of the country, and then returned with all possible haste"—without having set foot actually within the Cibolan settlements of New Mexico.

Dr Henry W. Haynes treats Estevanico with greater justice. He says: "The Negro was ordered to advance in a northerly direction fifty or sixty leagues, and to send back [to Fray Marcos] a report of what he should *discover*."² This the Negro did; he sent back information that he had *discovered* "a country, the finest in the world." It was Cibola, one of the long-sought-for "Seven Cities."³ Now, instead of giving credit to his guide, who had been killed in prosecuting his discoveries,⁴ Fray Marcos claimed all the honor for himself, and subsequent historians, if they have not sustained the friar have not placed the honor where it belongs.

It is a pity that we have no connected narrative of this important Negro discoverer. An account of his connection with the ill-fated expedition of Narvaez in 1527, and of his association with Marcos de Niza in 1539, may be found in the various writings bearing on this period. But aside from these little is known of his early

¹ Fiske, *Discovery of America*, chap. IV, p. 305.

² Winsor, *Narrative and Critical History*, vii, p. 477.

³ It was called "Cibola" by mistake, this being the name of the seven Zuñi settlements collectively. The pueblo of Hawikuh, now in ruins near the Zuñi summer village of Ojo Caliente, is the pueblo meant.—EDYER.

⁴ For the Zuñi account of the killing, see Lowery, *Spanish Settlements*, pp. 280, 281.

history. Estevan was born in Azamor,¹ one of the principal cities of Morocco, Africa, and may be supposed to have been about twenty-eight or thirty years of age when he joined the expedition of Narvaez, which sailed from San Lucas de Barrameda, Spain, June 17, 1527. With the first fleet were 506 persons. After landing on the coast of Florida they wandered through the country, harassed by the Indians until they had lost all but 240 of their number; then, about September 22, they set sail, in a number of boats, in the Gulf of Mexico. Narvaez, as usual, proved a poor leader; misfortune befell him and his men. At the end of the year only four survived,²—three whites and the Negro Estevanico. These four men discovered and landed upon the coast of Texas. They strove to keep together so that they might render mutual aid, but found this to be impossible. For eight years³ they wandered among the savages, and it is evident that the Negro manifested fully as much tact and ability as the white men for self-maintenance among the savages and for exploration. Each of these unfortunate Spanish wanderers labored as a slave, and all finally became "medicine-men" of distinction among the natives. They are reported to have become so expert in healing the sick that the savages came from great distances to be cured, and crowds followed them from place to place.⁴

The black explorer was as successful as his white brothers; he became familiar with the Indian dialects and characteristics, and the experience gained in these eight years of wandering afterward proved valuable to him. At the conclusion of their marvelous journey Estevan's three white companions left for Spain,⁵ but Estevan remained in Mexico, where he was held in esteem by those who were interested in extending the Spanish dominion.

¹ Buckingham Smith, *Narrative of Alvar Nuñez Cabeza de Vaca*, chap. XXXVIII, p. 173.

² *Ibid.*, chaps. XVII and XXXVIII. Bryant and Gay, *Popular History of the United States*, vol. I. Bancroft, *History of the United States*, I, p. 20.

³ Herrera, *op. cit.*, Stevens' trans., V, p. 105.

⁴ Smith, *Narrative of Cabeza de Vaca*, *op. cit.*, chap. XXII, p. 74.

⁵ Herrera, *op. cit.*, Stevens' trans., V, p. 105.

Accordingly it was not long before Estevan was selected as guide for an expedition into the northern country, a selection which gave him the opportunity of his life. He evidently had a strong ambition to become an explorer and a discoverer, as is shown by the fact that he risked disobedience to instructions in order that he might be the first to find Cibola. The story of the search for this supposed *El Dorado* is most interesting, but it is sufficient here to say that though he lost his life, the Negro succeeded in discovering the famous "Seven Cities" of the Zuni Indians of New Mexico.

The importance of the discovery of Estevan to his time, and its influence on the early progress of Spanish America, may be judged from the fact that various expeditions had been planned for this discovery, but had failed. Cortés had vainly spent nearly twelve years in trying to push an expedition into the northern country, and following Estevan's discovery there was a wild desire on the part of explorers to find the now famous Seven Cities of Cibola. Coronado longed to be the discoverer, and he did visit the country the year following the discovery made by Estevan and which resulted in the latter's death. Bandelier, who gives all the credit of the discovery to Niza, asserts that this journey, which he acknowledges to have been led by Estevan, was of the greatest value to Christendom, and to Spain in particular. The value of the discovery was such that we can only rightfully accord to Estevan an important place among the early explorers of America.

It is not inappropriate to add testimony from Sir Clements R. Markham, the noted historian, who writes: "Owing to information brought to Mexico by Cabeza de Vaca in 1528 [1536], the viceroy, Don Antonio Mendoza, determined to send an expedition to search for the powerful towns reported to exist in the north of Mexico. A friar named Marcos de Niza was sent in search of these towns. A Negro named Estevan, who had previously served in the expedition of Cabeza de Vaca, accompanied

Niza; and they set out from Culiacan, on the Gulf of California, in March, 1539. Niza and his Negro companion met with a good reception everywhere. They crossed deserts and came to Indians who had never heard of the Spaniards. Here they received tidings that in an extensive plain some days' journey to the north there were several large towns. Niza sent his faithful Negro companion *alone*, and *waited* for his return with news. Estevan sent back word to Niza that he had found the way to the great city called Cibola. Niza then followed; but after a few days he received news from an Indian that Estevan had reached Cibola, but had been killed by the natives. Niza fled back to Mexico. This," concludes the English historian, "is one instance of a Negro having taken an important part in the exploration of the continent. Estevan was the discoverer of Cibola," the territory of New Mexico.

It may be asked, Why is it that this Negro's name has remained practically in obscurity for more than three and a half centuries? The answer is not difficult. Until recently historians were not careful to note with any degree of accuracy and with due credit the useful and noble deeds of the Negro companions of Spanish conquerors, because Negroes were slaves, the property of masters who were supposed to be entitled to the credit for whatever the latter accomplished. The object of this paper is to direct attention to this apparent injustice, and if some one more competent will undertake a thorough investigation of the subject, the purpose of the writer will have been accomplished.

EARLIER AND LATER KOOTENAY ONOMATOLOGY

By ALEXANDER F. CHAMBERLAIN

One of the most interesting features of the American tongues is the development of new words and of new meanings for old ones. The present brief paper is devoted to the consideration of Kootenay synonyms, some of which represent the older (and, in many cases, simpler) terms, and others the later and often more complex developments: the former sometimes exhibiting the more natural, the latter the more artificial, regular, and grammatical side of the language. The ones, too, standing for the more ancient things of an indigenous character, the others for those whose origin or introduction is more or less a result of contact (direct or indirect) with the whites.

In the vocabulary following, the first word, generally the shorter and simpler term, may be often considered to belong to the older stratum of the language, though it is not always the case that the most ancient word is the shortest or the simplest. The words here discussed exemplify also the essential character of the Kootenay as an incorporating, holophrastic tongue.

It is just possible that one or two of the simpler and shorter (also older) words may turn out to have been derived from some neighboring language, but this cannot be determined at present. The Kootenay, it may be noted, contains, so far as is now known, very few words of foreign origin.

ADZE. *āqkō tāL*; *tetkinkānkō EmāL*. The first word, properly signifying 'axe,' was applied by some Indians to 'flint,' indicating, perhaps, a still older use of the term. The second is composed of the radical *tetk*, 'to cut open, tear, plow'; the particles *kin*, 'with the hand,' and *kō*, a verbal modifier; *-māL*, instrumental suffix.

ANKLE. *āqkānākēnam*; *āqkītskānā'mkē*. The first word is a general term applied to all the 'bony joints' of the body (ankle, knee, elbow, wrist, knuckles); the radical is *kā'nak*. The second consists of the radical of *nā'witskā'nē*, 'he stands up'; the prefix *āqk-*, and the instrumental suffix *-kē*. The literal meaning, therefore, is 'what one stands up on,' or 'what one stands with.'

BAG. *ātsū' Lā* (*ātsūwā' Lā*); *āqkōlā'kō*; *āqkāl*. The first word (the two forms given are Upper and Lower Kootenay, respectively) seems to be a derivative of *ātsū*, 'vessel of birch-bark.' The second, which has also given its name to the 'pocket' of the civilized garb adopted by many of the Indians, applies to all such things as cloth bags, pouches, purses, wallets, satchels, portman-teaus, etc. It is probably related to *āqkōklā' Enām*, 'skin,' and *āqkō' Lem*, 'parfleche.' The third word properly signified 'sack-cloth,' then 'sack, bag.' Another interesting word is *nīlākō' itis*, 'bag for holding gold-dust,' literally, 'gold its blanket.'

BED. *lāqā*; *āqklā' mōqō' Enam*; *yū' āqklkōm'nē' Enam*; *kīyā' q-kīlk-ō'm'nē' nāmke*. The first word signified originally a 'mat' (of buffalo-cow skin), the 'bed' of the primitive lodge. The second means rather 'pillow' than 'bed'—literally 'something to rest the head upon'; from *lām* (radical of *āqklām*, 'head'), *-qō* (suffix signifying 'to lie down'), *-nam* (general nominal suffix). The third word signifies 'something on top of which to sleep,' being composed of the particle *yū* ('on'), the radical *k-ō'm'nē* ('to sleep'), etc. The literal meaning of the fourth word is 'that with which one sleeps.' It contains the instrumental prefix-suffix *yā . . . kē*, 'that with (or by) which something is done.'

BOOTS. *Lā' En*; *Lū' mā*; *giākdīyukākū' pūk-ō' mōL*; *gākū' pōk-ō' mōL*. The first and second words are, respectively, the Upper and the Lower Kootenay terms for 'moccasins.' The second is properly applied to the long rubber boots worn by miners, the third to ordinary leather boots,—both contain the instrumental suffix *-mōL*, but the rest of the etymology is uncertain.

BRACES. *ā'qkīlū' katspū' kEnam*; *ā'qkōklū' k-ātskupū' kEnam*.

The principal component of these words appears to be identical with the radical of *á'qkókłá'k'átsłá'má*, 'boot-lace.'

BROOM. *á'nánk'ó'mól*; *góp'k'ó'wálik'ó'ndít'timól*. The first word signifies literally 'sweeping instrument,' from *á'ná'uk'ón*, 'to sweep,' and the instrumental suffix *-mól*. The second is related to one of the words for 'brush,' and its chief component is evidently *góp'k'ómá'łhól*, 'to brush, wipe.'

BRUSH. *yíwá'k'ímól* (*yá'á'k'ímól*); *góp'k'ó'má'k'ó'mól*. The first word signifies properly 'paint-brush,' being derived from *yá'á'k'ín*, 'to paint,' and the suffix *-mól*. The verb *yá'á'k'ín* refers to the primitive way of painting, for it is composed of the particle *yá* ('on'), the radical *á* ('paint'), and the particle *hín* ('with the hand'). The second word signifies 'brushing (or wiping) instrument,' the chief component being seen in the verb *góp'k'ó'má'łhól*, 'to brush, wipe.'

BUCKLE. *k'k'á'qan*; *á'qk'ó'włtsk'ó*. The second word properly refers to the 'tongue' of the buckle only,—*á'qk'ó'włtsk'ó* signifies also 'screw.' The literal meaning is, perhaps, 'something that stands up (or out).'

BUTTER. *tíná'mú*; *tsá'ó* (*tsó'ó*) *tíná'mú*. The first word is colloquial in this sense, its proper meaning being 'grease.' The second signifies literally 'milk grease.'

CANDY. *k'k'ó'kté*; *gá'k'ł'ł'k'k'ó'kté*. The first word, whose literal meaning is 'sugar,' is colloquial in this sense. The second signifies literally 'variegated (or striped) sugar.'

CHAIN. *nł'łk'ó*; *kánú'klānı'łm'ól*. The first word is the general term for 'metal, iron,' and was applied (and still is) by the Indians to all sorts of objects of metal. Thus, a bell, nail, metal money, etc., are all *nł'łk'ó*, though this use is now rather colloquial in some cases. The etymology of the second word is not clear.

CHIMNEY. *á'qk'á'á'n'k'ó*; *yá'hánáná'n'k'ó'k'ó'k'ó*. The first word is the term for the 'smoke-hole' of the lodge. The second contains, besides the instrumental prefix-suffix *yá . . . k'ó*, the radical of *á'qk'ink'ó'k'ó*, 'fire.'

CLOCK. *nādnik*; *nādnik nānā*. These words mean 'sun' and 'little sun,' respectively. A 'watch' is also *nādnik* or *nādnik nānā*. As is the case with many other primitive peoples, the clock and the watch are, like the sun, 'measurers.'

CLOTH. *āqk'wō*; *pā'ktse nānā*. The primary signification of the first word seems to be 'thread (vegetal fiber), string, cord, rope,' — then 'canvas, cloth,' etc. The second word means literally 'thin.'

COAT. *āqk'tawū'mLāEt*; *āqkawū'mLāEt*; *Likāpō*. The first is an Upper, the second a Lower Kootenay word, — they are applied to 'shirt, coat, upper garment,' etc., and possibly contain the radical *wūm* of *ā'qkōwūm*, 'belly.' The third word has been adopted by the Lower Kootenays from the *Likāpō* of the Chinook jargon, a term of French origin.

COWS. *Lū'k'pū*; *īā'mū*; *gā'nōklū'k'Le*. The first word signifies properly 'female buffalo,' the second is a general term for 'animal,' equivalent both to our 'cattle' and to 'deer' in older English. The third word, for which also the form *kā'nūklū'k'Le* (*gā'nōklū'k'Le*) *īā'mū* is in use, signifies literally 'many-colored (animal).'

DOCTOR. *āwū'mō*; *āwū'mō tī'kāt*; *kitkinkā*. The first word signifies 'medicine,' and is probably only colloquial in this sense; the second, whose meaning is 'medicine man,' is probably a slang term, or a colloquialism. The third signifies literally 'maker, doer,' being derived from *itkin*, 'to do, make,' with the verbal prefix *k-* and the agent-suffix *kā*.

DOLL. *gōtē mō(L)*; *Link'ō'emōL*. The second word signifies 'plaything,' as indicated by the cognate *kā'Link'ō'eyam*, 'play.'

DOOR. *āqk'ā'LaQō'wēt*; *Lāk'ānQō'EnāL*. The first word applies properly to the 'door' (or opening) of a lodge, the second to the door of a house. The first word would seem to be related to *āqk'ā'LaQl'p*, 'anus,' in prefix at least, although its radical seems to be *LaQō*. The etymology of the second word is not clear.

EVENING. *wáLQuá'ít* (*wáLkód'ít*); *kíwá'kámí nǎ'kk'áá*; *tǎ'Qǎ'É'téLmǎ'ít*. The first word seems related to *wá'LQuá*, 'yesterday.' The second signifies literally 'sun over the mountains,' or 'sun gone down.' The third, 'near night.'

FLOUR. *gítEmók*; *kítak'ǎ'QaL*; *kítǎ'ák'ǎ'QuáL*; *kamná'qlá'ámák*. The last word signifies 'white earth (clay)' and this may be only an accidental use. The first seems related to *ǎ'qkinǎ' mák'áná*, 'biscuit, crackers.' The second and third seem derived from the verb *nítQǎqǎ'íná*, 'he pounds.' But compare *ǎ'qkin'ǎ'áLáL*, 'wheat.'

HAMMER. *pǎ'pǎ*; *tǎ'psEnwá'tsǎk'ómóL*. The first word properly signifies the old primitive stone hammer of these Indians, the second applies to the iron hammer of the whites, and means perhaps 'driving-in instrument.'

HANDKERCHIEF. *tǎ'kúkinǎ'móL*; *k'ítisǎ'kakinǎ'móL*. Both words probably signify 'instrument (*-móL*) for wiping or washing with the hand (*kin*).'

HANDLE. *ǎqkǎn*; *ǎqká'kémák*; *ǎ'qkǎkLák'ǎ'á'tsEnám*. The first word is of quite general signification, and applies to the 'handle' of a paddle, knife, fork, etc. The second applies properly to the 'handle' of a salmon-spear. The third to the 'handle' of tin pails, cups, and the like.

HAT. *ǎqká'yúkwǎ'áEnám*; *ǎLǎ'Qǎǎ*. The first word, which was originally applied to the old head-dress of wolf or coyote skin once in common use among the Kootenays, is now used with reference to all sorts of hats and caps procured from the whites or made by the Indians themselves. The word seems to signify literally 'what is worn on the head.' The second word is applied to a straw hat.

HOUSE. *ǎ'qkíLǎ'Enám*; *Lǎ'ókLǎ'Enám*. The first word is properly the term for 'lodge, tipi, tent,' the second (properly applied to buildings) signifies 'wooden (*Lǎ'ók*, 'wood') house.' The chief radical of both words is *Lǎ*, 'lodge.'

LAMP. *ǎ'qkínk'ǎ'kǎ*; *ǎqká'LEmú'kǎwá'ít*; *kítákinQǎ'móL*.

The first word properly signifies 'fire,' and is probably only colloquial in the sense of 'pine torch,' 'lamp,' etc. The second properly means 'light.' The third, which contains *it* ('to do'), *kin* ('with the hand'), and the instrumental suffix *-mōL*, probably signifies 'instrument for making a light.'

MAIZE (EAR). *ā'qkōpāL*; *gātsLā' L'māk*. The first word properly signifies the 'cone' of the fir. The second is also applied to a species of lupine (*L. argentatus*).

MAT. *Lāqā*; *tā'nāl*. The original meaning of the first word was the 'mat' of buffalo-cow skin in the primitive lodge, whence it has been extended to include all sorts of skin mats, carpets, etc. The second primarily signified the 'rush' of which the 'mat' was made, then the 'mat' itself, and subsequently all similar 'mats.' The mats called *tā'nāl* were used to cover the lodges.

MATCH. *ā'qkink'ō'kō*; *ā'qkōLā'pkō*. The first word signifies properly 'fire,' but seems to be commonly used (perhaps a little colloquially) in this sense. The second properly applies to a 'match' of cedar bark in use among the Indians.

METEOR. *ā'qkitnō'hōs*; *ganā'kqō*. The first word signifies 'star,' the second properly means 'falling.'

MOON. *nātānik*; *nā'kk-āā*; *k'teilmī'ēt nātānik*; *k'teilmī'ēt nā'kk-āā*. The first two words, though now signifying more particularly 'sun,' originally meant, in all probability, both 'sun' and 'moon.' The last two words signify 'night sun.'

NAIL. *nāLkō*; *k'itkēLwītēik-ōmōL*; *k'tā'ptsak'ōmōL*. The first word signifies literally 'iron,' and is rather colloquial in the sense of 'nail.' The second contains *it* ('to do'), *wītē* ('stand up'), *kō* (a qualificatory particle), *-mōL* (instrumental suffix), and signifies probably 'the straight thing by which something is done (or put together).' The third word is related to the term for 'hammer,' and means perhaps 'the instrument for driving in.'

PEACH. *gō'lwā*; *āqkē' Lmāk*. The first of these words signified originally the 'hip' of the prairie-rose (*Rosa pisocarpa*), and is

more properly applied to the apple, etc. The second, applying originally to the fruit of the wild cherry (*Prunus demissa*), is now used with reference to all kinds of fruit with stones,—cherry, plum, peach, etc. It is also used in the sense of 'apple-pip,' 'cucumber-seed,' and (generally) of pips and seeds of fruits, vegetables, and the like.

POOR. *kə́mnákák'íne*; *lilitíne* ('he is poor'). The second of these words, as the term for 'rich' (*wíllitíne*) indicates, signifies 'without property (things),'—it is composed of the privative *lit*, the radical *liti* ('property, things'), the verb *i*, and verbal suffix *-né*.

RICH. *kə́kə́mnákák'íne*; *wíllitíne*; *kə́kstámkák'íne*. The first word signifies literally 'he is not (*kə́*) poor' and the last 'he is strong.' The literal meaning of the second is 'he has much (*wí*) property (or many things).'

SALT. *g(ə́)wísláqané*; *kómískōláqané*; *gómískōquá'mól*. The first word is also applied to 'vinegar,' and seems to signify 'it is bitter.' The two others seem to be related to the word for 'yeast' (*kə́mískə́mól*), the third having the instrumental suffix *-mól*.

SEA. *ə́qkə́sək wə́'ə*; *gə́wísláqané wə́'ə*. The first word signifies 'shore (or end of land) water (*wə́'ə*). The literal meaning of the second is 'salt water.'

SILK. *ə́qkə́lən'kən*; *lāsəd' (lāsōd')*. The first word is Upper Kootenay, the second, which is Lower Kootenay, has been adopted from the French *de la soie*, and not, apparently, from the *lastwé* of the Chinook jargon.

SOOT. *ə́qk'ítskə́ kíl*; *ə́qkənōk'ək'ə́pə́*. The first word seems to signify also 'charcoal, coal,' etc. The second is a derivative from the same radical as the words for 'fire' (*ə́qkínk'ə́k'ə́*), 'ashes' (*ə́qkə́k'émə́k'ə́*), and the like.

TOBACCO. *tcə́kə́'wək' (tcə́kə́'wək)*; *kə́wə́'ukəl*; *yə́'k'ait (yə́'k'it)*. The first word is properly applied to the 'kinnikinnick' of the west, a sort of tobacco made from the leaves, bark, etc.,

of the bear berry (*Arctostaphylos uva-ursi*); the second to a kind of 'tobacco' made from rye-grass seed. The last word, which is now in general use for 'tobacco,' was probably applied at first to the twists (in French *carotte*) or rolls of tobacco dealt out by the Hudson's Bay Company, from which pieces were from time to time broken off,—the word would be a derivative of *yāk'fite*, 'he breaks in two.'

WHISKEY. *wā'ō* (*wū'ū*); *nīptkā wū'ō*; *nōlākinē wū'ō*; *sūyā'pī wū'ō*. The first of these words signifies literally 'water (liquid),' and is the general term for that. The others mean, respectively, 'spirit water,' 'strange water,' and 'white man's water.'

WIFE. *pā'tkē*; *tītnā'mō*. The first word is the general term for 'woman,' used also for 'wife.' The second, which properly signifies 'old woman,' may be paralleled from several languages of savage and civilized man.

YEAST. *kō'miskō'mōl*; *kīmiskīnmōl*; *gū'tkāmātskō'p'māl*; *gītā'lākō'pmāl*; *gīEmō'Lūpkūptē'tēmōl*. The first of these words seems related to the term for 'salt' and the second seems also of the same stock,—both contain the instrumental suffix *-mōl*. The third and fourth are related to each other and perhaps to *kītkak'ō'Qāl*, 'flour.' The last seems to contain the radicals of *gīEmōk*, 'flour,' and *kānkū'ptēl*, 'bread,' also the instrumental suffix *-mōl*.

The words and their meanings discussed above represent fairly the condition of the Kootenay language as to the points in question. They suggest also the great importance of the study of the older and the newer strata of our aboriginal tongues.

ON THE USE OF ZERO AND TWENTY IN THE MAYA TIME SYSTEM

By GEORGE BYRON GORDON

The familiar method employed by the Maya scribes in writing the numbers from 1 to 19 inclusive, consists, as has long been known, in the adoption of a normal set of numeral symbols composed of lines and dots. It has also been demonstrated that the same people employed certain face symbols to represent the same numbers. The precise idea underlying this invention is not known. It appears that the face representing any number below 10 could be transformed into a symbol for the sum of that number and 10 by giving it a skeleton jaw. At the same time it appears that some of the numbers above 10 had also distinct faces to represent them individually. The special feature of the face representing 10 was the fleshless appearance of the bones, giving it the aspect of a death's-head.

Thus, while two distinct sets of numerals have been made out for the numbers from 1 to 19 inclusive, or at least two distinct methods of indicating these numbers, the means used to convey the idea of other numbers have never been satisfactorily determined.

The importance of the part played by 20 in the Maya numeral and calendar systems gives reason for expecting to find some symbol for that number playing a conspicuous part in the inscriptions. It is also evident that, in the same connection, the scribes were constantly coming in contact with *zero*, which consequently played an important part and must have had its appropriate symbol. Certain characters used by the Mayas, and occurring frequently in the inscriptions and manuscripts, have been

explained as symbols for 20, and others have been variously interpreted as 0 and as 20. Dr Seler published, two years ago, a list of characters occurring in the codices, which he regarded as signs for 0, and another list of characters from the inscriptions, which he believed to stand for the same number. He also gave two groups of characters, one from the manuscripts and one from the inscriptions, which he regarded as symbols for 20. Each member of this last group from the inscriptions is a sign used to accompany the month symbol, apparently to indicate the position in the month of the given day, when that day is not one of the days numbered from 1 to 19.

Bowditch has shown that in three cases out of four from the Dresden Codex, and in three cases out of four from the inscriptions, after the nineteenth day is passed, according to the reading of the text, the next succeeding month would seem to be reached, this being the inference naturally to be drawn from the month symbol in each case. The character attending the month symbol in each of these cases would consequently seem to represent the numerical designation of the beginning day, and since it is not 1, Bowditch has expressed the opinion that the weight of evidence is in favor of the hypothesis that the beginning day of the month was numbered 0 and that the symbol in consequence stands for that number.

Seler, in an article written at a later date than the one cited, in which he gives a group of symbols for 20, has pointed out that in the exceptional case from the inscriptions, where, after the nineteenth day is passed, the month given is that in which the nineteen days have been counted, the date in question is connected with the next succeeding date as well as with the preceding date by numbers written after it and before it. This, as the text stands, could be true only if the days of the month were numbered in order from 1 to 20. Seler consequently cites this example as proof that the symbol with the month sign means 20. He explains the symbol used in the



LINTEL FROM MENCHÉ. (PHOTOGRAPH OF A CAST IN PEABODY MUSEUM.)

other class of cases, in which, after the nineteenth day is passed, the following month is introduced by translating that symbol as *ete* (Vorabend). Both symbols were used, according to this

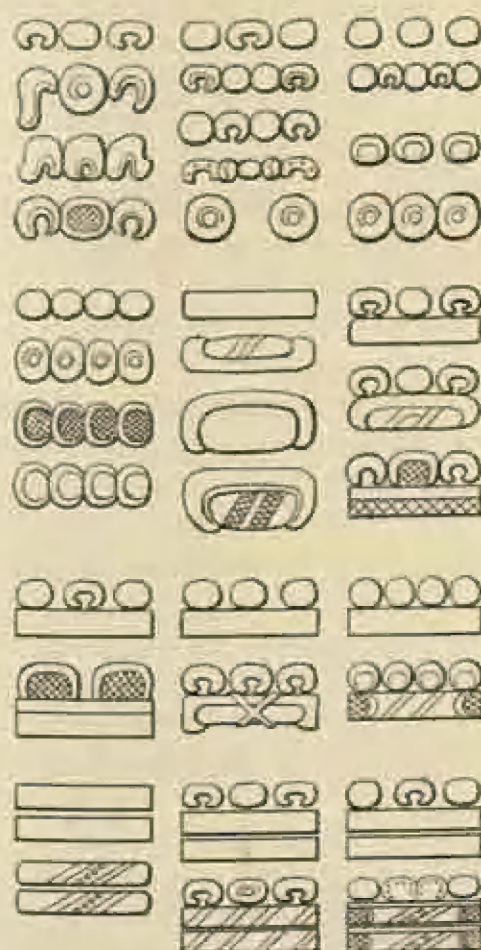


FIG. 22.—The normal numerical symbols from 1 to 20, illustrating some of the variations.

theory, to designate the last day of the month; but while one means 20, the other means *ete*. That is to say, the Mayas variously designated the last day of a month as the twentieth of that month or as the *ete* of the following month. Thus the last

day of Mol, for instance, might be written as the twentieth day of Mol or as the *ve* of Chen, each designation having its appropriate symbol. Seler thus divides the group, to each member of which he had already assigned the value 20 into two divisions, one consisting of several examples of the character meaning *ve*, and the other consisting of his symbol for 20, of which but a single example occurs in a position where the context shows what day is meant. It is true that this symbol differs from those used in connection with the other class of cases in all known examples, but the corresponding symbol in the Dresden Codex, in the single example cited by Bowditch, does not differ from the symbol used in the three examples of the other class from the same source.

The outcome of these different investigations would seem to be that, while the Mayas often referred to the last day of a month in terms of the next succeeding month, and sometimes in terms of the month in which the day belonged, it may well be doubted whether the symbol used in either case meant either 0 or 20. It does not seem safe at present to say what the exact English equivalent would be for the one or the other mode of expression.

There is but one symbol for 20 concerning which all seem to be agreed,—it is found in the manuscripts, and I am not aware that it has any counterpart in the inscriptions. (Fig. 13, *a*.)



FIG. 13.—*a*, Symbol for 20 in Dresden Codex. *b*, Symbol for 0 in Dresden Codex.

In regard to 0, it is perfectly evident that in certain positions certain symbols were treated as equivalent to this number, whatever meaning the same symbols may have had apart from these positions. These are the symbols used in connection with the periods of the long count to indicate that a full round of the period in question has been counted and that no periods of that particular order are to be added to the reckoning.

Goodman, while insisting that these symbols really mean 20, is explicit in his statement that they are to be treated as 0—which indeed is proved by his entire system, and his contention that they did not represent 0, but 20, to the native scribe, is somewhat lacking in force. It is well known, moreover, that the symbols in question were applied to the Uinal in precisely the same way as to the Kin, the Tun, and the Katun. It is also well known and admitted by Goodman that the number 20 was not associated with the Uinal term in the system employed in all the manuscripts and inscriptions known. It also appears from the tablets of Tikal, to be mentioned later, that at least one of the same signs was used in connection with the Cycle, where, according to Goodman's method, the full count was 13, and where, in consequence, 20 could have no place.

Since the figures of all connected time series give the number of periods that have actually elapsed, it would be natural to this system that, when the full count of any given period required to make up one of the next higher period had elapsed, the number representing that full count should be written with the term for the given period. At the same time it required that the one period of higher order should be counted in terms of that period. Thus, when twenty Kins had elapsed, the number 20 would be written in the Kin place and the number 1 would be written in the Uinal place; when eighteen Uinals had elapsed, the number 18 would be written in the Uinal place and the number 1 in the Tun place; when twenty Tuns were complete, the number 20 would be written in the Tun place, and the number 1 in the Katun place, and so on up to the period of highest order. Such a method, though a perfectly logical and natural development of a numeral system which did not contemplate the arithmetical cipher, had serious disadvantages which could not escape the notice of the Maya scholars, nor could they fail to be aware that they were constantly treating the numerals 20 and 18 as though they meant nothing. This would happen most frequently in the

case of 20, and in this way, in the course of time, certain symbols for that number may have become transformed into symbols for 0, the meaning being completely changed while the form underwent little or no transformation.

The fact that the forms of symbols which we find doing duty for 0 suggest the number 20 would thus be explained on the ground that they were originally symbols for 20 which were ultimately set apart to serve in another capacity, just as words change their meaning,—a very natural process and a very familiar one. Not until the symbol had acquired the 0 meaning would it be applied to the Uinal term or to the Cycle.

In the codices the symbol used in connection with the time series in the capacity of 0 is the form shown in fig. 13, *b*, supposed to be derived from a shell. I see no necessity for supposing that this symbol ever had any other meaning. It is not used in the inscriptions in connection with time series. In place of it there are two forms of symbol in common use. One is the quadruple symbol (fig. 14); the other has for its distinguishing and most remarkable feature a human hand. Maudslay has already compared the first with the form of a calendar found in the *Féjervary* codex and approximated by another in the *Cortesianus*. Since this plan of arranging the days on a figure of this sort, where the twenty days of the month and the two hundred and sixty days of the *Tonalamatl* (or period of 13×20) are divided into four equal groups corresponding to the four divisions of the figure, was in vogue in a region corresponding in part, or at least contiguous, to the region where a figure quite identical was used as a numeral symbol, it might be argued that the figure of the calendar, by reason of its association with the twenty days of the month, came to be adopted as a symbol for that number. But the reverse might be argued with equal justice, namely, that a symbol for 20 was adopted, occasionally at least, perhaps to suit the fancy of some artist, as a convenient form on which to arrange the days in their order. In

other words, it was simply selected as a picturesque form for a calendar.

This use of a character representing 20 might be regarded as symbolic of the way in which the calendar system itself was a development of the vigesimal system of numeration.

It might also be argued that since the figure was used in arranging a complete calendar of two hundred and sixty days, the symbol might have been adopted to represent not 20 but a *complete period* of any denomination. This would explain its use in connection with the time series, but if this were the correct explanation of its use, it is hard to see how another symbol, having a different form and derivation, could be substituted for it at will,—and how both should have been used even in the same series, as often happens.

On the whole, the most plausible theory would seem to be that the figure was originally a symbol for 20, and in its use in the construction of a pictorial calendar was quite arbitrary except in so far as the figure naturally lent itself for the purpose.

The technical composition of the figure as a 20-symbol might be explained as a combination of 5 and 4. Either, first, of five units, one at the center and one at each of the four quarters, multiplied by 4 represented by the four divisions; or, second, of four symbols for 5.

By comparing the elements of the symbol as illustrated by the different examples in fig. 14 with



FIG. 14.—The quadruple symbol for zero.

some of the examples of the numeral 1 shown in fig. 12, the similarity is perfectly apparent. It is also clear that the four elements disposed at the four quarters around the central piece also bear a very close resemblance to some of the more elaborate and fanciful examples of the bar, the normal symbol for 5. Since 20 was made up, in the Maya system of numeration, of four

fives, a symbol composed in such a manner would be very appropriate.

The quadruple symbol never stands by itself in an inscription, but sometimes forms a glyph in combination with another nu-



FIG. 13.—The quadruple symbol in combination with the numerals 5, 10, and 15.

meral, but the only numerals with which it is thus combined are 5, 10, or 15 (fig. 15).

Coming, now, to the other symbol commonly used in the same connection as that one just de-

scribed, we find that the typical form is a face with a hand stretched across the lower jaw (fig. 16, *b*). Another form which it often takes is a hand supporting an object resembling an abbreviated spiral surrounded by a border, and not unlike a certain form of eye found frequently as a feature of the sculptured figures (fig. 16, *c*).

I have already offered the suggestion that both the quadruple symbol and the two forms in which the hand appears originally

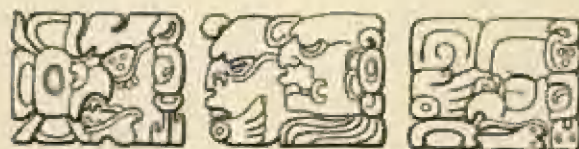


FIG. 16.—The three symbols for 200: *a*, *a* Tana; *b*, *b* Kikoi; *c*, *c* Tana.

stood for 20, and that they afterward became signs for 0. My reasons for this view in regard to the first have already been stated. The considerations that have led me to the same conclusion in regard to the others will appear presently.

I come now to the enunciation of the proposition with which it is the chief purpose of this article to deal, namely, that a certain form of hand stands in the inscriptions as a symbol for 20. What



UPPER PORTION OF A STELA AT SASTANQUIQUI. (PHOTOGRAPH OF A CAST IN PEABODY MUSEUM.)

follows, while it does not constitute a complete mathematical demonstration of this proposition, is nevertheless sufficient to establish a presumption in its favor and to recommend it for further consideration.

The principles on which this proposition is based are, briefly stated, as follows:

First. The face symbol for the Cycle is distinguished from that for the Katun by a hand upon the lower jaw. As the Cycle is equal to 20 Katuns, the hand in this case would seem to be equivalent to 20.¹ This is capable of the construction that whereas the skeletonizing of a jaw implies the addition of 10, the placing of a hand in the same relation to a face character implies multiplication by 20.

Second. The face numeral used in time series to represent a full count resembles very closely the face sign for 1, except that the ear-peg extending across the cheek is replaced by a hand like that on the Cycle sign. Now, it is perfectly clear that in the case of the Cycle, the hand cannot mean that the value of the Katun sign is multiplied by 0 or in any way brought into relation with that number, hence if there is any uniformity in the system, as we have good reason to expect, the hand in the full-count sign must have signified originally at least the number 20. A good illustration of this principle is afforded by the initial series of the Tablet of the Foliated Cross, where A 3 and A 8 seem to be quite identical with A 7, except that in the latter the ear-peg is replaced by a hand on the lower jaw. (The mark I L on the cheek in these examples is not a constant feature of the 1 face.) Without the hand, I am inclined to think that the frontal ornament and the lock of hair would identify the face as a symbol for 1.

Third. This principle involves the question of the initial day of the 52-year period. That the Dominicals, or year-bearers, in the calendar used by the writers of the inscriptions

¹ Bowditch has already stated this principle.

and of the Dresden Codex were Akbal, Lamat, Ben, and Ezenab has been generally recognized, and indeed it becomes perfectly evident from the inscriptions themselves. The fact that Goodman puts Ik, Manik, Eb, and Caban at the head of the years in his tables, is simply the result of his system of numbering, in which the first day is not counted until the second is begun. This transposition of the Dominicals has no effect whatever on the result, at least so far as the present argument is concerned. The important question which remains undecided in this connection is: Which of the year-bearers stood at the beginning of the first year? Nothing whatever has been put forward to show that one of these days has any more right to the position than another. If we place Lamat at the head of the calendar, then the twentieth day will be Manik, and if we count the days by twenties through the whole period of 52 years, the twentieth place will always be occupied by Manik. Now, the symbol for Manik, both in the codices and in the inscriptions, is a hand similar to that which we have examined in connection with the two face symbols.

Before proceeding to test the conclusions to which the principles stated would seem to lead, it will be necessary to say a few words concerning the numbering of time periods in the texts.

In an article in the last number of this journal I had occasion to cite several illustrations tending to show that while the numbers attached to the periods in connected series intended to express the exact distance between two dates or fixed points in time are meant to be used in their cardinal sense, and indicate the number of periods that have actually expired, yet a number used in connection with a period but not intended to express the distance between two dates or a definite length of time refers to the ordinal numeration of the periods, calling the beginning member of the series the first.

To illustrate this ordinal numeration, plate xv is introduced. The photograph is of a plaster cast in the Peabody Museum and

represents a lintel from Menché. The inscription at the top begins with the date 5 Eb 15 Mac, and in the fifth glyph to the right is seen the Katun sign with the number 4. Nearly all the initial dates at Menché give nine Cycles, indicating that the dates are in what we would call the tenth Cycle, and the date on this lintel is found to be in what we would call the fourth Katun of the same Cycle, and the Maya plan of numeration would therefore seem to have been the same as ours.

Turning now to Stela D of Quirigua, we find on the east side the date 7 Ahau 18 Pop following the initial series; then after five unknown glyphs comes the date 8 Ahau 3 Pop, without any series of the usual order to connect it with the initial date (fig. 17). How is this last date to be brought into relation with the long count? Is it by some unknown method of reckoning in the preceding glyphs? This may well be doubted unless it can be shown that the inscriptions contain nothing but reckonings backward and forward according to different methods. A date indicated simply by the day and month, with their respective numerals, is not a fixed point in time, but any one of an indefinite series of points occurring at intervals of 52 years. How then is the particular day 8 Ahau 3 Pop referred to in this inscription determined?

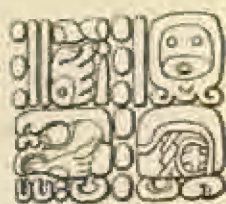


FIG. 17.—Stela D, Quirigua, east side.

The glyph immediately preceding the date is composed of a head very much like the Cycle symbol, together with the number 13 and a hand. Is this a declaration that the date is in the twentieth Katun of the thirteenth Cycle of some Great Cycle? As no reckonings have been found at Quirigua, bringing the count down so late as the end of the fifty-fourth Great Cycle, and since the initial date of the most important inscription at Palenque goes back to the last Katun of the fifty-third Great Cycle,¹ this position

¹ This is according to Goodman's interpretation of the initial series of the Tablet of the Cross.

is the more likely. The trial confirms this conjecture, for the date is not found in the last Katun of the last Cycle of the fifty-fourth Great Cycle of Goodman, but it is found in that position in the fifty-third Great Cycle, as follows:

53. 12. 19. 3. 15. 0. 8 Ahau 3 Pop.

At the end of the inscription the reckoning is brought back to the initial date.

One example of this sort is, of course, of very little value. It is only the combined evidence of a great many examples, all con-

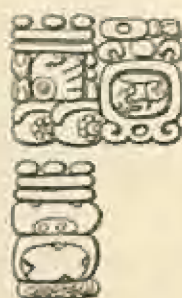


FIG. 18—Stela F, Quirigua,
east side, B 16 A 17.



FIG. 19—Part of an inscription on Stela 4, Copan.

forming to the same rule, that can be relied upon. A sufficient number of such examples could not fail to prove convincing.

The next example is from the east side of Stela F of Quirigua, B 16 A 17 (fig. 18). Here we have the date 1 Ahau 13 Yaxkin without any connecting series. Preceding this date is the same glyph which we found before the date on Stela D, except that here the Cycle symbol is the ordinary character instead of the head. As precisely the same remarks will apply to this date as to the first example, I will simply record the fact that it stands as follows:

53. 12. 19. 10. 5. 0. 1 Ahau 13 Yaxkin,

thus affording additional testimony in support of our proposition.

The next example is found on Stela 4 of Copan¹ (fig. 19). Here the initial series with the day and month date, though partly obliterated, would seem to be 54. 9. 8. 15. 0. 0. 10 Ahau 8 Tzec. The three glyphs following are partly destroyed. It is just possible that these glyphs may have contained a series connecting the initial date with the next date which follows in A B 6, but there is no indication of such a series, and the probability is that none existed. Following this second date, in C D 6 is a pair of symbols the meaning of which is not clear, but since the number 5 appears in connection with one of them, and since the glyph immediately following is the date 4 Ahau 13 Yax (just five Tuns from the preceding date), it is not unlikely that this distance is declared in the intervening glyph. Following the date 4 Ahau 13 Yax is the Katun sign, surmounted by the number 15 and preceded by a hand. Above the hand is a symbol which Goodman declares to be a sign for *beginning*. He does not make clear his reasons for this interpretation, however, and, so far as its meaning is indicated by its position, I do not see why the character might not just as well mean *ended*. According to our interpretation of the two examples cited, the Cycle symbol is accompanied by its own number and also the number of the Katun; that is to say, by its own number and the number of the next period of lower order. In the present example we would have the Katun sign accompanied by its own number and that of the next period of lower order, i. e., the Tun. If, then, the glyph C D 7 means that the twentieth Tun of the fifteenth Katun is ended, the series indicated would be

54. 9. 15. 0. 0. 0.

We find that the date corresponding to this series is 4 Ahau 13 Yax, the date given in A B 7.

The hand in this third example holds a little rod; otherwise it is very similar to the hand in the first two examples. Whether

¹ I am indebted to Mr Maudslay for a lithographic reproduction of the drawing by Miss Annie Hunter for the forthcoming addition to his already elaborate work on Copan.

the innovation modifies the meaning in any way or is simply an artistic addition, it is impossible to say. We shall come across the same thing again, and it would appear that, so far as the



FIG. 20.—Beginning of the inscription on the south side of Stela c, Copan.

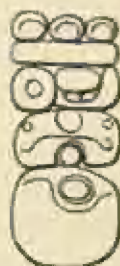
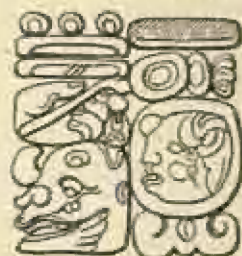


FIG. 21.—Beginning of the inscription on the north side of Stela c, Copan.

numerical value is concerned, the symbol is not affected by the introduction of this detail.

The fourth example is from Stela c of Copan. On the south side of this monument there is an inscription, beginning in the usual way with the large glyph always found at the head of the initial series and called by Goodman the Great Cycle glyph (fig. 20). The inscription is very unusual, however, in that, instead of being



STELA AT SASTANQUIQUI. (PHOTOGRAPH OF A CAST IN PEABODY MUSEUM.)

followed by the initial series consisting of Cycles, Katuns, Tuns, Uinals, and Kins, the beginning or Great Cycle glyph is followed by the Cycle glyph, which is followed immediately by the date 6 Ahau 18 Kayab. How is the position of this date in relation to the long count indicated? The Cycle has the number 13 attached to it. It is also attended by a hand holding a little rod precisely like the one in the last example. If this means the twentieth Katun of the thirteenth Cycle (the Great Cycle being announced by the beginning glyph), then the date is fixed absolutely and unmistakably.

Since we are unable to determine the number of the Great Cycle from the glyph, it will have to be determined by a trial. The day 6 Ahau 18 Kayab is found in the last Katun of the last Cycle of the fifty-third Great Cycle, as follows:

53. 12. 19. 5. 14. 0. 6 Ahau 18 Kayab.

Following the initial date after a brief interval comes the long series: 11. 14. 5. 1. 0, after which the initial date is repeated. Then comes the date 6 Ahau 13 Muan. Now, if this number be added to the initial date, it will take us to the latter date.

53. 12. 19. 5. 14. 0. 6 Ahau 18 Kayab

11. 14. 5. 1. 0

54. 11. 13. 10. 15. 0. 6 Ahau 13 Muan.

The last date is just exactly 371 days, or 1 year and 6 days, later than the last date on the Hieroglyphic Stairway, and the month is

¹ Maudslay's drawing shows the day number as 8, but the photograph made for the Peabody Museum, though unfortunately not very clear, seems to show the number 6.

According to Goodman the dates in this inscription and those on the opposite side of the same stela are declared to be the initial days of Tuns. His reason for this statement seems to be the presence, in connection with each day-sign and its numeral, of an element which he interprets as a declaration to this effect. I am unable to follow Goodman to this conclusion, since the sign in question is not always found with the day Ahau when that day is the beginning of a 360-day period, and, on the other hand, it does occur sometimes in connection with days which cannot occupy that position. Goodman, indeed, admits his inability to explain either of the inscriptions on this stela, and is inclined to believe that both are full of errors. It would seem, however, as if the writer was particularly explicit, since he took the trouble to repeat the initial date after the long series on the south side.

the same in both cases. In the monograph on the Hieroglyphic Stairway, published by the Peabody Museum, I expressed the opinion that Stela C belonged to the same period as that structure. I had not at that time made any attempt to fix the dates in the inscription on Stela C, and that opinion was based solely on certain technical peculiarities in the sculpture on both monuments.

On the north side of Stela C is another inscription beginning in the same way as the one on the south side (fig. 21). First comes the beginning or Great Cycle glyph, then the Cycle, attended in the same way as before by the number 13 and a hand holding a little rod; then follows the date. The day number is unfortunately not very clear, as the stone at this point is injured. Maudslay's drawing, which shows the number 15, is of course in error, and the stone shows that the number is almost certainly 5. The month glyph is 8 Cumhu. When the monograph on the Hieroglyphic Stairway was written I was inclined to believe that the month number in this date was 18, but since then I have found reason to change this opinion, and the character which appears between the month and its numeral in the present example, and which also appears twice in Date 1 of the Hieroglyphic Stairway, once between the Uinal and its numeral, and again between the month sign and its numeral, has no numerical value. Date 1 is in reality 54. 9. 5. 19. 3. 0. 8 Ahau 3 Zotz.

If the initial date on the north side of Stela C is 5 Ahau 8 Cumhu, as it almost certainly is, it is found in the twentieth Katun of the thirteenth Cycle of the fifty-third Great Cycle, and thus agrees with the other examples.

53. 12. 19. 7. 15. 0. 5 Ahau 8 Cumhu.

It is noteworthy that the two dates at Quirigua and the two initial dates on Stela C of Copan are in the same Katun as the initial date of the Tablet of the Cross as interpreted by Goodman.

In the Temple of the Inscriptions at Palenque, East Panel,

P 2 to P 6, the date 3 Ahau 3 Mac is declared to be the day when 9 Cycles and 9 Katuns were ended, which is equivalent to saying that it was the beginning day of the tenth Katun. On the West Panel the same date is repeated E F 8. Following it is the long number 2. 9. 1. 12. 1, and in E 12 is the Cycle sign with the number 7 and a hand. If the number given be counted back from the beginning of the tenth Katun of the tenth Cycle, the day reached is in the twentieth Katun of the seventh Cycle.

To these examples of the use of the hand symbol I add, with some hesitation, another, found on Stela 1 of Copan. Unfortunately the text of this inscription is in places erased. The initial date on the east side of the stela reads, as Goodman has already rendered it, 54. 9. 12. 3. 14. 0. 5 Ahau 8 Uo. It is true that the month sign which occupied the position A 7 is entirely effaced, but Goodman is perfectly justified in calling it 8 Uo. From here to the bottom of the double column nothing is at present intelligible. Passing to the south side of the stela we find a column of glyphs, beginning apparently as follows: *10 Ahau, thirteenth Cycle the twentieth Tun of the 6th Katun.*¹ Now, reckoning 13 Cycles to the Great Cycle, the twentieth Tun of the sixth Katun of the thirteenth Cycle would always begin with 10 Ahau, the month date being different in every case. Thus 53. 12. 3. 19. 0. 0 is 10 Ahau 13 Muan, and 54. 12. 3. 19. 0. 0 is 10 Ahau 8 Zac.

Farther down the column appears a distance number beginning with the Kin sign, accompanied in a manner that is very curious

¹ Mandley's drawing shows the number 8 with the Katun sign, but the cast in the Peabody Museum shows it to be clearly 6. Compare the Katun numeral in the initial series of Stela 9 of Copan.

I am aware that Goodman has interpreted the symbol which I have called the *Cycle*, as the month *Chen*. While the injury to the lower portion of the glyph makes its form somewhat uncertain, it would seem to have the marks of the Cycle symbol. I know of no example of the Chen symbol that has this double appearance, and, moreover, the form of knot used in this case is that commonly associated with the Cycle sign, and differs somewhat from that used as a superfix for Chen, although it is true that the knot is usually placed *below* the Cycle and not *above* as it is here.

and unique in my experience. The symbol attending *tehKin* sign is composed of a sort of disk on which the number 8 is engraved,¹ and over this another character on which appears the number 3. This symbol recalls the initial date on Stela K of Quirigua, where, as in the present case, the month date is wanting, and in its place is a head surmounted by a character very similar to this. Following the *Kin* sign with its strange companion is another glyph indicating 10 *Uinals*. Following this is the day 10 *Lamat*. If we count forward 10 *Uinals* and 8 *Kins* from any day 10 *Ahau*, it will in the natural order of things bring us to a day 10 *Lamat*. Is it possible that the month date is in some way indicated by the strange character with the *Kin* sign? If by the thirteenth Cycle at the head of the column is meant the last Cycle of the Great Cycle announced so conspicuously at the beginning of the inscription, then the day 10 *Ahau* is 54. 12. 5. 19. 0. 0. 10 *Ahau* 8 *Zac*. Adding 10 *Uinals* and 8 *Kins* brings us to 10 *Lamat* 11 *Zip*. Now, *Zip* is the third month, and the number 3 is clearly written on the upper part of the symbol attending the *Kin* sign. The number on the lower part, as we have seen, is 8; $8 + 3 = 11$, i. e., 11 *Zip*. Moreover *Zac* is the eleventh month, and 10 *Ahau* is the eighth day of the month.² Is this a hidden cipher in which some augury or prophetic vision is concealed, or some future event mysteriously foreshadowed?

The particular form of hand with which we are concerned in this connection, is the relaxed or half-open hand, sometimes holding lightly a small rod. It will be seen how well this hand agrees in form and expression with the sign for the day *Manik*.

We return now to the quadruple symbol for full count whose

¹ At first sight the number looks like 13. The bar has a light line dividing it lengthwise and giving it somewhat the appearance of 10. Compare Stela 1, Copan, north, 2.

² It should be noted that the number which should accompany the month sign on Stela K is also 3.

numerical value in the inscriptions, as we have seen, is represented by 0, in order to consider its value in a new connection.

I am aware of only two examples of this symbol in connection with the Cycle. Both are on the wooden tablets from Tikal now in the Museum at Basel. The preservation of these tablets is a form of evidence that Tikal was among the latest of the Maya cities, or at least that it continued to flourish at a later period than Copan, for instance, where, though the climate is more favorable for its preservation than at Tikal, not a trace of wood has been found, and where the condition of the ruins forbids the expectation of finding traces of any material so perishable.

The Tikal tablets, of which excellent photographic reproductions have been given by Rosny in his *Compte-Rendu d'une Mission Scientifique*, with which I have been able to compare the casts in



FIG. 22.—Date on first wooden tablet from Tikal.



FIG. 23.—Date on second wooden tablet from Tikal.

the Peabody Museum made from Charnay's molds, are three in number — one complete, the other two fragmentary.

On the first is a hieroglyphic inscription consisting of sixty-four glyphs in an excellent state of preservation, distributed on either side of the great arched serpent that encloses the central portion of the tablet, twenty-eight on the left and thirty-six on the right, reading in double columns, beginning at the extreme left. The inscription begins without any initial series and starts out with the date 3 Ahau 3 Mol (fig. 22). In B 3 A 4 is another date, 11 Ik 15 Chen, connected with the first by the series 2. 2. 2, found in B 2 A 3. In D 4 C 5 is 12 Akbal 16 Chen, which is the day

following the last date. The one day is expressed in C 4. In E F 2 is a third date, 13 Akbal 1 Chen, which is arrived at by adding 3 Tuns to the last date. This 3 Tuns is plainly indicated in F 1. After this there are no more reckonings and no more dates in the inscription.

The sum of the three series in this inscription, the entire distance reckoned forward from the initial date, is $5. 2. 3 = 1843$ days. Now, it is a fact that may easily be verified by a reference to the inscriptions at Palenque, Copan, Quirigua, etc., that when the initial date is relatively remote, the reckonings that follow, either singly or in succession, invariably cover a long stretch of time and lead up to a date in much closer relation to the later initial dates. Stela C at Copan and the Tablet of the Cross at Palenque are examples in point. This situation naturally invites the construction that the initial dates in these cases went far back into the past, and that the dates which follow brought the record of events, historical, astronomical, or mythological, down to more recent times, approximating if not actually reaching the date of writing. Now, since the record of the inscription from Tikal covers a period of only a little more than five years, the inference is that the initial date itself may be taken for the date with which the tablet is historically identified. Here we are confronted with the same question as before: What is the position of this date in the long count, and how is it to be determined? No Great Cycle glyph appears at all, unless it exists in some unfamiliar form in the body of the inscription or on some other part of the tablet.

Immediately following the initial date is the Cycle symbol — the head marked with the sign of the hand. In front of this symbol stands the quadruple sign, indicating that a full round of Cycles has been counted, and implying a first Cycle. In combination with this sign is the number 15 in normal characters. Above this number is a sign the meaning of which is not known, and the exact way in which it modifies the meaning of the glyph does not appear; but it does not affect the numerical relations.

This is the first instance I have seen of the use of the quadruple symbol in connection with the Cycle, but, judging by its uniform meaning in connection with the other periods, it can have but one meaning here. If, therefore, the date is forward from 4 Ahau 8 Cumhu, the beginning of Goodman's fifty-fourth Great Cycle, as the absence of long reckonings and the condition of the tablet would seem to prove, and if Goodman is right in counting thirteen Cycles to the Great Cycle, then this date would in all probability be in his fifty-fifth Great Cycle, the one to which all other known dates in the Maya inscriptions, taken together, lead.

Does the number 15 mean the fifteenth Katun? Let us assume that the Great Cycle with which we are concerned must be either 53, 54, 55, 56, or 57. Then if the Katun is the fifteenth, we have for the beginning day of the Katun, using the notation of the initial series:

53. 0. 14. 0. 0. 0. 2	Ahau 8 Yaxkin
54. 0. 14. 0. 0. 0. 2	Ahau 3 Zip
55. 0. 14. 0. 0. 0. 2	Ahau 3 Kayab
56. 0. 14. 0. 0. 0. 2	Ahau 18 Ceh
57. 0. 14. 0. 0. 0. 2	Ahau 13 Mol.

Now, to reach 3 Ahau 3 Mol from each of these dates it is necessary to go forward as follows:

53. 0. 15. 3. 7. 0.
54. 0. 16. 5. 4. 0.
55. 0. 14. 11. 12. 0.
56. 0. 15. 11. 3. 0.
57. 0. 16. 10. 7. 0.

The only one of these that comes in a fifteenth Katun is the third, and the initial date of the tablet is as follows:

55. 0. 14. 11. 12. 0. 3 Ahau 3 Mol.

The second tablet has an inscription beginning in precisely the same way as the first, with 3 Ahau 3 Mol (fig. 23).

Farther on come three short series, each connecting the date which precedes it with that which follows, and the sum of these series, 5. 13. 0, equal to 5 years and 235 days, represents the distance of the last date from the first. In this respect, as in others, the inscription resembles very closely the one already examined. Here, again, the initial date is followed by the Cycle symbol prefixed by the quadruple sign, indicating that a full round of Cycles has been counted. Instead, however, of being combined with the number 15, it is combined with a single ornamented bar. Although I know of no other instance where the normal symbol for 5 is decorated in precisely this way, there is such a variety in the manner in which these numerals are treated that such a departure is not strange, and we may read the glyph *a fifth Katun after a full round of Cycles*. In the same way as the first date was determined we find this one to be:

55. 0. 4. 0. 14. 0. 3 Ahau 3 Mol.

The third tablet has an inscription beginning with the day and month date 9 Ahau 13 Pop (fig. 24). Here the only subsequent

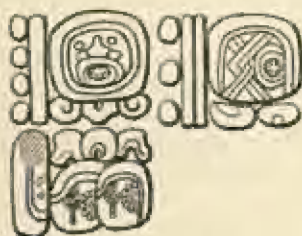


FIG. 24.—Date on third wooden tablet from Tikal.

reckoning is less than a year. The initial date is again followed by the Cycle symbol, not in this case a head, as in the other two, but the more familiar symbol. Above the Cycle is what appears to be the number 1, and at the left is a broad ornamented bar.

If this means the fifth Katun of the first Cycle, we must expect to find the date in the same Katun as that in the last example, which proves to be the case:

55. 0. 4. 6. 9. 0. 6 Ahau 13 Pop.

The exact reading of the glyph A 2 in the last example is, according to this, *the fifth Katun of the first Cycle*, while in the second example the reading would be *the fifth Katun after a full*

count of Cycles. The meaning is obviously the same in the two cases.

The conclusions arrived at by the methods used in this paper are:

First, that while the three numeral symbols illustrated in fig. 16 are each equivalent to 0, there are some indications that each meant originally 20.

Second, that the Kins, Tuns, and Katuns are numbered consecutively from 1 to 20, that the Uinals are numbered from 1 to 18, and that the Cycles are numbered from 1 to 13. Also that Goodman is right in allowing 13 Cycles to the Great Cycle.

Third, that the quadruple symbol is applied to the Cycle in the same way as to the other periods.

Fourth, that the hand is a symbol for twenty.

Fifth, that there is a reasonable presumption in favor of regarding Lamat as the initial day of the 52-year period, based on the form of the *Manik* symbol, which would seem to mark it as the twentieth day.

Affecting the conclusions arrived at, wherein they imply the historical character of such a date as 55. 0. 14. 11. 12. 0, are the records of the books of Chilán Balam, in which it is recorded that Ahpulha died on a day 9 Imix 18 Zip, in the year 4 Kan, 6 Tuns (or years) before the end of Katun 13 Ahau, which the books state was in the year 1536. According to the method suggested by Bowditch, the death of Ahpulha occurred in 55. 0. 2. 13. 3. 1. If we accept this and accept also the date of the first tablet of Tikal as interpreted, then Tikal was an inhabited city in 1770, more than two centuries after the death of Ahpulha, just two centuries after Palácio saw the ruins of Copan, and a century before the tablets were carried away. It should be remembered, however, that, according to Bowditch's showing, there are (granting that the record is not affected by changes in the calendar) three possible dates to choose from in a round of 18,720 years, beginning with the fifty-fourth Great Cycle, and the date selected by Bowditch is

simply the one of the three that would seem to accord best with general conditions and available data. If the second date were chosen, the Tikal tablet would recede to about 2000 B.C., and Stela C of Copan to about 3000 B.C.

Although there is no known reference to Tikal prior to 1848, and therefore modern history does not prove directly that Tikal was not inhabited in 1770, the indirect historical evidence seems to preclude such a possibility. The site of the ruins is just forty miles from Flores, in the lake of San Andres, in the heart of Peten, and an equal distance from the frontier of British Honduras at the point where the boundary intersects Belize river. Cortés visited Flores in his journey to Honduras, and he heard nothing of an inhabited city in that region. The mahogany cutters of the British colony had explored Belize river and penetrated Peten long before 1770.

On the other hand, does the condition of the wooden tablets of Tikal warrant the belief in such an antiquity as 2000 B.C., and do the stelæ of Copan justify the assignment of such an antiquity as 3000 B.C.? Unfortunately we do not know the precise conditions under which the tablets were preserved, but the temple to which they pertained may have been closed for ages in such a way as to exclude moisture.

The stelæ of Copan, as we know, have been exposed to the elements as long as the city has existed as a ruin, and yet some of them still show traces of paint upon the surface. This does not seem consistent with such an antiquity as that suggested, and yet it is a curious fact that the ruins would seem to have undergone no perceptible change since 1570, when they were described by Palacio. I think that it may well be doubted by anybody who compares Palacio's description with present conditions, whether the monuments present today any visible marks of age more than they did three hundred years ago. If such be the case, they might well endure many thousand years without experiencing greater changes than their present condition reveals. It



STELA AT SASTANQUIUL. (PHOTOGRAPH OF A CAST IN PEABODY MUSEUM.)

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should be remembered, moreover, that the climatic conditions are especially favorable. Not only is frost unknown, but the temperature is very even the year round. The monuments have been protected from the direct rays of the sun as well as from the direct impact of the rains by the great forests in which they may have been buried for ages. The only changes to which they have been subjected are those connected with the growth and decay of vegetation. Thus, while the trees have protected the monuments and edifices from the elements they have contributed greatly to their destruction, for the falling trees, torn from their places by storms, or toppling from the effects of age and decay, have carried many of the monuments to the ground with them. Apart from such fortuitous destruction, sheltered from the elements by the overarching forest, and reposing in its friendly shade, the passage of a thousand years might leave but little mark upon such monuments as the stelæ of Copan.

In conclusion I will call attention to the stelæ of Sastanquiqui (Ceibal) which further illustrate the method of numbering the Katuns. On the first (plate XVI), B 1 A 2 is the date 6 Men 18 Zip. F 1 is unfortunately indistinct, but the number 1 is clearly seen at the left. Immediately following this glyph, E 2, is 7 Ahau 18 Zip. Since this latter date is just one year and 65 days from the former, it would seem probable that the glyph in F 1 represents this period. The first half of F 2 is the Cycle sign with the number 10 and the character which, according to the method we have adopted, would seem to mean *ended*. The other half of the glyph reads *first Katun* or *1 Katun*. The position of the day in the long count is as follows:

54. 10. 0. 0. 0. 0. 7 Ahau 18 Zip.

In A 3 is the date 5 Ahau 3 Kayab. A 4 is the Katun sign with the number 1 and the sign which means *ended*. The first Katun being ended, the day should be the beginning of the second Katun, which proves to be the case:

54. 10. 1. 0. 0. 0. 5 Ahau 3 Kayab.

The inscription on this stone, so far as it at present admits of translation, is as follows: *The day 6 Men 18 Zip. . . . One year more to 7 Ahau 18 Zip. The tenth Cycle was ended and the day was the beginning of the first Katun. On the day 5 Ahau 3 Kayab, the first Katun was ended* Or it might be read: *The day 6 Men 18 Zip. . . . One year more to 7 Ahau 18 Zip when the tenth Cycle was ended. One Katun more to 5 Ahau 3 Kayab when the first Katun was ended.*

On the next stela (plate XVII) there is an inscription beginning with 5 Ahau 3 Kayab. In A 3 is the Katun sign with the number 2, and we have already seen that this date is at the beginning of the second Katun. A 4 is the Kin sign with the number 1. This passage of the inscription might, therefore, be translated as follows: *5 Ahau 3 Kayab in the second Katun, the first day.*

The inscription on another stela (plate XVIII) begins with the same date, but there is apparently nothing to show its position.

There is still another stela at Sastanquiqui with an inscription beginning with this date.

It would appear from these observations on the stelæ of Sastanquiqui that the date 5 Ahau 3 Kayab, the beginning of the second Katun of the eleventh Cycle of the fifty-fourth Great Cycle, was a very important one at that place, perhaps the date on which the city was founded. At any rate we are justified in supposing that it was a date prominently associated with the city's history, since it is a date that does not appear in the inscriptions at other places.

To facilitate study by readers who may not have access to Goodman's tables, and (since the methods adapted in this article do not conform to his Annual Calendar) to avoid confusion, an annual calendar is given in the following thirteen tables, constructed according to the plan approved in the present article,

THE ANNUAL CALENDAR

YEARS				Pop	Uo	Zip	Zote	Troc	Xol	Yaxin	Mol	Chen	Yax	Zac	Ceh	Mac	Kankin	Muan	Pax	Kayab	Cumhu	Uayeb
1	14	27	40																			
1	Lamat.....	Ben.....	Ezauab.....	Akbal.....	1	8	2	0	3	10	4	11	13	2	0	12	2	1	0	0	5	10
2	Muhur.....	Ik.....	Caum.....	Kan.....	2	9	3	10	4	11	5	12	3	1	1	1	3	2	0	10	5	11
3	Oc.....	Men.....	Ahau.....	Chicchan.....	3	10	4	11	5	12	0	13	4	2	2	2	0	3	10	4	11	5
4	Chuen.....	Chb.....	Iux.....	Ciml.....	4	11	5	12	0	13	1	2	5	3	3	3	10	4	11	5	12	0
5	Eb.....	Caban.....	Ik.....	Manik.....	5	12	0	13	1	2	3	0	6	4	4	4	11	5	12	0	13	1
6	Ben.....	Ezauab.....	Akbal.....	Lamat.....	6	13	1	2	3	0	0	10	7	5	5	5	12	0	13	1	2	3
7	Ik.....	Caum.....	Kan.....	Muhur.....	7	1	2	3	0	1	0	11	8	6	6	6	1	8	2	3	4	0
8	Men.....	Ahau.....	Chicchan.....	Oc.....	8	2	3	0	1	2	1	12	9	7	7	7	8	3	4	5	10	11
9	Chb.....	Iux.....	Ciml.....	Chuen.....	9	3	4	1	2	3	2	1	10	8	8	8	9	4	5	11	12	13
10	Caban.....	Ik.....	Manik.....	Eb.....	10	4	5	12	0	13	3	4	11	9	9	9	10	5	12	1	2	3
11	Ezauab.....	Akbal.....	Lamat.....	Ben.....	11	5	6	13	1	2	4	5	12	10	10	10	11	6	13	2	3	4
12	Caum.....	Kan.....	Muhur.....	Ik.....	12	6	7	1	3	4	5	6	13	11	11	11	12	7	1	3	4	5
13	Ahau.....	Chicchan.....	Oc.....	Men.....	13	7	8	2	0	1	6	7	1	12	12	12	13	8	2	4	5	6
14	Iux.....	Ciml.....	Chuen.....	Chb.....	14	8	9	3	1	2	7	8	2	1	13	13	1	9	3	5	6	7
15	Ik.....	Manik.....	Eb.....	Caban.....	15	9	10	4	2	3	8	9	3	2	14	14	2	10	4	6	7	8
16	Akbal.....	Lamat.....	Ben.....	Ezauab.....	16	10	11	5	3	4	9	10	4	3	15	15	3	11	5	7	8	9
17	Kan.....	Muhur.....	Ik.....	Caum.....	17	11	12	6	4	5	10	11	5	4	16	16	4	12	6	8	9	10
18	Chicchan.....	Oc.....	Men.....	Ahau.....	18	12	0	13	5	6	11	12	6	5	17	17	5	13	7	9	10	11
19	Ciml.....	Chuen.....	Chb.....	Iux.....	19	0	13	1	6	7	12	0	7	6	18	18	6	14	8	10	11	12
20	Manik.....	Eb.....	Caban.....	Ik.....	20	1	2	3	7	8	13	1	8	7	19	19	7	15	9	11	12	13

THE ANNUAL CALENDAR

	YEARS					Pop	Us	Zip	Zote	Tote	Xal	Yaslin	Mal	Chen	Yas	Zac	Cdh	Mac	Kankin	Muan	Pas	Kayab	Caminu	Mayeb			
	3		16		29																				42		
	Days	Days	Days	Days	Days																				Days	Days	Days
1	Lamat	Bien	Erenab	Akal	5	10	4	11	5	19	9	21	9	7	8	10	10	3	10	11	13	12					
2	Muluc	Ix	Canc	Kan	4	11	5	19	4	13	8	22	10	8	10	11	10	4	11	13	13						
3	Oc	Men	Ahuu	Chichen	5	12	13	20	5	14	9	23	11	9	11	12	11	5	12	14	14						
4	Chuen	Cib	Imix	Cimil	4	13	14	21	6	15	10	24	12	10	12	13	12	6	13	15	15						
5	Eb	Calan	Ik	Manik	4	14	15	22	7	16	11	25	13	11	13	14	13	7	14	16	16						
6	Bien	Erenab	Akal	Lamat	4	15	16	23	8	17	12	26	14	12	14	15	14	8	15	17	17						
7	Ik	Canc	Kan	Muluc	5	16	17	24	9	18	13	27	15	13	15	16	15	9	16	18	18						
8	Men	Ahuu	Chichen	Oc	10	17	18	25	10	19	14	28	16	14	16	17	16	10	17	19	19						
9	Cib	Imix	Cimil	Chuen	11	18	19	26	11	20	15	29	17	15	17	18	17	11	18	20	20						
10	Calan	Ik	Manik	Eb	12	19	20	27	12	21	16	30	18	16	18	19	18	12	19	21	21						
11	Erenab	Lamat	Imix	Ben	13	20	21	28	13	22	17	31	19	17	19	20	19	13	20	22	22						
12	Canc	Kan	Oc	Ix	2	21	22	29	14	23	18	32	20	18	20	21	20	14	21	23	23						
13	Ahuu	Chichen	Chichen	Men	3	22	23	30	15	24	19	33	21	19	21	22	21	15	22	24	24						
14	Imix	Cimil	Chuen	Cib	3	23	24	31	16	25	20	34	22	20	22	23	22	16	23	25	25						
15	Ik	Manik	Eb	Calan	4	24	25	32	17	26	21	35	23	21	23	24	23	17	24	26	26						
16	Akal	Lamat	Ben	Erenab	5	25	26	33	18	27	22	36	24	22	24	25	24	18	25	27	27						
17	Kan	Muluc	Ik	Chuen	6	26	27	34	19	28	23	37	25	23	25	26	25	19	26	28	28						
18	Chichen	Oc	Men	Ahuu	7	27	28	35	20	29	24	38	26	24	26	27	26	20	27	29	29						
19	Cimil	Chuen	Cib	Imix	8	28	29	36	21	30	25	39	27	25	27	28	27	21	28	30	30						
20	Manik	Eb	Calan	Ik	9	29	30	37	22	31	26	40	28	26	28	29	28	22	29	31	31						

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YEARS					Pop	Uo	Zip	Zote	Tzee	Xul	Yakim	Mol	Chen	Yas	Zac	Ceh	Mac	Kankin	Muan	Par	Kayab	Cunhu	Uyab
43																							
4	17	30	Days																				
1	Lamat.	Ben	Erenab	Akhal.	4	11	5	12	0	13	7	1	6	3	0	3	10	4	11	11	8	0	13
2	Mulac	Is	Canac	Kan	5	12	0	13	2	1	8	2	0	3	10	4	11	5	12	0	3	10	7
3	Oc	Men	Alau	Chicchan	6	13	7	1	8	2	9	3	10	4	11	5	12	0	3	10	7	13	13
4	Chuen	Cib	Is	Canac	7	1	8	2	0	3	10	4	11	5	12	0	3	10	7	13	13	13	13
5	Eb	Canac	Is	Manik	8	2	0	3	10	4	11	5	12	0	3	10	7	13	13	13	13	13	13
6	Ben	Erenab	Akhal.	Lamat	9	3	10	4	11	5	12	0	3	10	4	11	5	12	0	3	10	7	13
7	Is	Canac	Kan	Mol	10	4	11	5	12	0	3	10	4	11	5	12	0	3	10	7	13	13	13
8	Men	Alau	Chicchan	Oc	11	5	12	0	3	10	4	11	5	12	0	3	10	7	13	13	13	13	13
9	Cib	Is	Canac	Chuen	12	0	3	10	4	11	5	12	0	3	10	4	11	5	12	0	3	10	7
10	Canac	Is	Manik	Eb	13	7	1	8	2	0	3	10	4	11	5	12	0	3	10	7	13	13	13
11	Erenab	Akhal.	Lamat	Ben	14	8	2	0	3	10	4	11	5	12	0	3	10	7	13	13	13	13	13
12	Canac	Kan	Mol	Is	15	9	3	10	4	11	5	12	0	3	10	4	11	5	12	0	3	10	7
13	Alau	Chicchan	Oc	Men	16	10	4	11	5	12	0	3	10	4	11	5	12	0	3	10	7	13	13
14	Is	Canac	Is	Chuen	17	11	5	12	0	3	10	4	11	5	12	0	3	10	7	13	13	13	13
15	Akhal.	Manik	Eb	Canac	18	12	0	3	10	4	11	5	12	0	3	10	7	13	13	13	13	13	13
16	Kan	Lamat	Ben	Erenab	19	13	7	1	8	2	0	3	10	4	11	5	12	0	3	10	7	13	13
17	Chicchan	Mol	Is	Canac	20	14	8	2	0	3	10	4	11	5	12	0	3	10	7	13	13	13	13
18	Oc	Men	Alau	Chicchan	21	15	9	3	10	4	11	5	12	0	3	10	7	13	13	13	13	13	13
19	Is	Canac	Is	Chuen	22	16	10	4	11	5	12	0	3	10	4	11	5	12	0	3	10	7	13
20	Manik	Eb	Canac	Ben	23	17	11	5	12	0	3	10	4	11	5	12	0	3	10	7	13	13	13

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	YEARS					Pop	Uo	Zip	Zotl	Tues	Xal	Yexkib	Mol	Chen	Yax	Zac	Ceh	Mac	Kaukin	Muan	Iax	Kayab	Cumbu	Uayeb	
	18		31		44																				
	Days	Days	Days	Days	Days																				Days
1	Lanuit	Den	Kaanab	Akhal	Akhal	1	12	0	13	1	1	8	8	0	5	3	10	4	11	5	12	0	19	1	
2	Muluc	Ix	Cauac	Kan	Kan	2	13	1	1	2	2	9	9	1	6	4	11	5	12	6	1	2	2	10	
3	Oc	Men	Ahan	Chicchan	Chicchan	3	1	8	2	3	3	10	10	2	7	5	12	6	11	7	2	3	3	11	
4	Chuen	Cib	Imix	Cimil	Cimil	4	2	9	3	4	4	11	11	3	8	6	13	7	12	8	3	4	4	12	
5	Eb	Caban	Ik	Manik	Manik	5	3	10	4	5	5	12	12	4	9	7	1	11	13	9	4	5	5	13	
6	Ben	Ecanab	Akhal	Lanuit	Lanuit	6	4	11	5	6	6	13	13	5	10	8	2	12	14	5	5	6	6	14	
7	Ix	Cauac	Kan	Muluc	Muluc	7	5	12	6	7	7	1	1	6	11	9	3	13	15	6	6	7	7	15	
8	Men	Chicchan	Chicchan	Oc	Oc	8	6	13	7	8	8	2	2	7	12	10	4	14	16	7	7	8	8	16	
9	Cib	Imix	Cimil	Chuen	Chuen	9	7	1	8	9	9	3	3	8	13	11	5	15	17	8	8	9	9	17	
10	Caban	Ik	Manik	Eb	Eb	10	8	2	9	10	10	4	4	9	14	12	6	16	18	9	9	10	10	18	
11	Ecanab	Akhal	Lanuit	Ben	Ben	11	9	3	10	11	11	5	5	10	15	13	7	17	19	10	10	11	11	19	
12	Cauac	Kan	Muluc	Ix	Ix	12	10	4	11	12	12	6	6	11	16	14	8	18	20	11	11	12	12	20	
13	Ahan	Chicchan	Oc	Men	Men	13	11	5	12	13	13	7	7	12	17	15	9	19	21	12	12	13	13	21	
14	Imix	Cimil	Chuen	Cib	Cib	14	12	6	13	14	14	8	8	13	18	16	10	20	22	13	13	14	14	22	
15	Ik	Manik	Eb	Caban	Caban	15	13	7	1	15	15	9	9	14	19	17	11	21	23	14	14	15	15	23	
16	Akhal	Lanuit	Ben	Kaanab	Kaanab	16	14	8	2	16	16	10	10	15	20	18	12	22	24	15	15	16	16	24	
17	Kan	Muluc	Ik	Cauac	Cauac	17	15	9	3	17	17	11	11	16	21	19	13	23	25	16	16	17	17	25	
18	Chuen	Oc	Men	Ahan	Ahan	18	16	10	4	18	18	12	12	17	22	20	14	24	26	17	17	18	18	26	
19	Cimil	Chuen	Cib	Imix	Imix	19	17	11	5	19	19	13	13	18	23	21	15	25	27	18	18	19	19	27	
20	Manik	Eb	Caban	Ik	Ik	20	18	12	6	20	20	14	14	19	24	22	16	26	28	19	19	20	20	28	

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YEARS					Pop.	Ua.	Zip.	Zot.	Tee.	Kai.	Yaklo.	Mol.	Chen.	Vax.	Zac.	Ceh.	Mac.	Kantia.	Maun.	Pax.	Kayab.	Cumhu.	Uayeb.
0	19	32	45	Days																			
1	Lamat.	Ben.	Ennab.	Akbal.	0	13	2	1	8	2	9	3	10	4	11	12	13	14	15	16	17	18	19
2	Muluc.	Ix.	Cauac.	Kan.	7	2	10	3	10	3	10	4	11	12	13	14	15	16	17	18	19	20	21
3	Oc.	Men.	Ahan.	Chicchan.	8	3	11	4	11	4	11	5	12	13	14	15	16	17	18	19	20	21	22
4	Chuen.	Cib.	Imix.	Ciml.	9	4	12	5	12	5	12	6	13	14	15	16	17	18	19	20	21	22	23
5	Eb.	Calan.	Ix.	Manik.	10	5	13	6	13	6	13	7	14	15	16	17	18	19	20	21	22	23	24
6	Ben.	Ennab.	Akbal.	Lamat.	11	6	14	7	14	7	14	8	15	16	17	18	19	20	21	22	23	24	25
7	Is.	Cauac.	Kan.	Muluc.	12	7	15	8	15	8	15	9	16	17	18	19	20	21	22	23	24	25	26
8	Men.	Ahan.	Chicchan.	Oc.	13	8	16	9	16	9	16	10	17	18	19	20	21	22	23	24	25	26	27
9	Cib.	Imix.	Ciml.	Chuen.	1	9	17	10	17	10	17	11	18	19	20	21	22	23	24	25	26	27	28
10	Calan.	Is.	Manik.	Eb.	2	10	18	11	18	11	18	12	19	20	21	22	23	24	25	26	27	28	29
11	Ennab.	Akbal.	Lamat.	Ben.	3	11	19	12	19	12	19	13	20	21	22	23	24	25	26	27	28	29	30
12	Cauac.	Kan.	Muluc.	Ix.	4	12	20	13	20	13	20	14	21	22	23	24	25	26	27	28	29	30	31
13	Ahan.	Chicchan.	Oc.	Men.	5	13	21	14	21	14	21	15	22	23	24	25	26	27	28	29	30	31	32
14	Imix.	Ciml.	Chuen.	Caban.	6	14	22	15	22	15	22	16	23	24	25	26	27	28	29	30	31	32	33
15	Is.	Manik.	Ben.	Eb.	7	15	23	16	23	16	23	17	24	25	26	27	28	29	30	31	32	33	34
16	Akbal.	Lamat.	Imix.	Ennab.	8	16	24	17	24	17	24	18	25	26	27	28	29	30	31	32	33	34	35
17	Kan.	Muluc.	Oc.	Chuen.	9	17	25	18	25	18	25	19	26	27	28	29	30	31	32	33	34	35	36
18	Chicchan.	Is.	Men.	Ahan.	10	18	26	19	26	19	26	20	27	28	29	30	31	32	33	34	35	36	37
19	Ciml.	Chuen.	Cib.	Imix.	11	19	27	20	27	20	27	21	28	29	30	31	32	33	34	35	36	37	38
20	Manik.	Eb.	Caban.	Is.	12	20	28	21	28	21	28	22	29	30	31	32	33	34	35	36	37	38	39

THE ANNUAL CALENDAR

YEARS					Pop	Uo	Zip	Zotz	Tzec	Xul	Yaxkin	Mol	Chen	Yax	Zac	Coh	Mac	Kankin	Muan	Fax	Kayab	Cumhu	Uayeb
7	20	33	46	Days																			
1	Lamat....	Ben.....	Ezrenb....	Akbal....	64	1	8	5	0	5	10	4	13	5	19	0	13	1	17	1	9	6	10
2	Muluc....	Ix.....	Canac....	Kan.....	5	2	9	6	10	4	11	5	12	0	13	1	8	2	0	0	10	14	11
3	Oc.....	Men.....	Ahau....	Chicchan..	9	3	10	7	11	5	12	6	13	1	2	2	3	0	0	10	4	12	12
4	Chuen....	Cib.....	Imix....	Gimi....	10	4	11	8	12	0	13	7	4	2	3	3	4	1	0	11	5	13	13
5	Eb.....	Caban....	Ik.....	Manik....	11	5	12	9	1	6	1	8	5	3	4	4	5	1	1	12	6	14	14
6	Ben.....	Ezrenb....	Akbal....	Lamat....	12	6	13	10	2	7	2	9	6	4	5	5	6	2	2	13	7	15	15
7	Ix.....	Canac....	Kan.....	Muluc....	13	7	1	11	3	8	3	10	7	5	6	6	7	3	3	14	8	16	16
8	Men.....	Ahau....	Chicchan..	Oc.....	14	8	2	12	4	9	4	11	8	6	7	7	8	4	4	15	9	17	17
9	Cib.....	Imix....	Gimi....	Chuen....	15	9	3	1	5	10	5	12	9	7	8	8	9	5	5	16	10	18	18
10	Caban....	Ik.....	Manik....	Eb.....	16	10	4	2	6	11	6	1	10	8	9	9	10	6	6	17	11	19	19
11	Ezrenb....	Akbal....	Lamat....	Ben.....	17	11	5	3	7	12	7	2	11	9	10	10	11	7	7	18	12	20	20
12	Canac....	Kan.....	Muluc....	Ix.....	18	12	6	4	8	1	8	3	12	10	11	11	12	8	8	19	13	1	1
13	Ahau....	Chicchan..	Oc.....	Men.....	19	1	7	5	9	2	9	4	1	11	12	12	13	9	9	20	14	2	2
14	Imix....	Gimi....	Chuen....	Cib.....	20	2	8	6	10	3	10	5	2	12	13	13	14	10	10	21	15	3	3
15	Ik.....	Manik....	Eb.....	Caban....	21	3	9	7	11	4	11	6	3	1	14	14	15	11	11	22	16	4	4
16	Akbal....	Lamat....	Ben.....	Ezrenb....	22	4	10	8	12	5	12	7	4	2	15	15	16	12	12	23	17	5	5
17	Kan.....	Muluc....	Ix.....	Canac....	23	5	11	9	1	6	13	8	5	3	16	16	17	13	13	24	18	6	6
18	Chicchan..	Oc.....	Men.....	Ahau....	24	6	12	10	2	7	14	9	6	4	17	17	18	14	14	25	19	7	7
19	Gimi....	Chuen....	Cib.....	Imix....	25	7	1	11	3	8	1	10	7	5	18	18	19	15	15	26	20	8	8
20	Manik....	Eb.....	Caban....	Ik.....	26	8	2	12	4	9	2	11	8	6	19	19	20	16	16	27	21	9	9

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YEARS					Days	47	Days	34	Days	21	Days	8	Days
1	Lamat.	Ben	Erenub	Akbal	8	9	2	10	4	11	5	12	6
2	Muluc	Ix	Cauc	Kan	9	10	3	11	5	12	6	13	7
3	Oc	Men	Ahan	Chichen	10	11	4	12	6	13	7	1	8
4	Chuen	Cib	Imix	Cimi	11	12	5	13	7	1	8	10	4
5	Eb	Calan	Ih	Manik	12	13	6	14	8	2	9	11	5
6	Ben	Erenub	Akbal	Lamat	13	14	7	15	9	3	10	12	6
7	Ix	Cauc	Kan	Muluc	14	15	8	16	10	4	11	13	7
8	Men	Ahan	Chichen	Oc	15	16	9	17	11	5	12	14	8
9	Cib	Imix	Cimi	Chuen	16	17	10	18	12	6	13	15	9
10	Calan	Ih	Manik	Eb	17	18	11	19	13	7	1	16	10
11	Erenub	Akbal	Lamat	Ben	18	19	12	20	14	8	2	17	11
12	Cauc	Kan	Muluc	Ix	19	20	13	21	15	9	3	18	12
13	Ahan	Chichen	Oc	Men	20	21	14	22	16	10	4	19	13
14	Imix	Cimi	Chuen	Cib	21	22	15	23	17	11	5	20	14
15	Ik	Manik	Ben	Calan	22	23	16	24	18	12	6	21	15
16	Akbal	Lamat	Erenub	Imix	23	24	17	25	19	13	7	22	16
17	Kan	Muluc	Ix	Cauc	24	25	18	26	20	14	8	23	17
18	Chichen	Oc	Men	Ahan	25	26	19	27	21	15	9	24	18
19	Cimi	Chuen	Cib	Imix	26	27	20	28	22	16	10	25	19
20	Manik	Eb	Calan	Ik	27	28	21	29	23	17	11	26	20

THE ANNUAL CALENDAR

	YEARS												Top	Uo	Zip	Zotz	Tee	Xal	Yaxkin	Mol	Chen	Yax	Zac	Ceh	Mac	Kankin	Muan	Pax	Kayab	Cuhhu	Uayeb																		
	9		22		35		48																																										
	Days		Days		Days		Days																																										
1	Lamat	Ben	Eznab	Akbal	Eznab	Akbal	9	3	10	4	12	3	13	13	7	1	1	6	4	11	3	10	4	11	11	10	9	8	7	6	5	4	3	2	1														
2	Muluc	Ix	Cauac	Kan	Cauac	Kan	10	4	11	12	7	13	8	2	9	2	2	10	5	12	4	11	12	1	12	13	12	11	10	9	8	7	6	5	4	3	2	1											
3	Oc	Men	Ahan	Chicchan	Ahan	Chicchan	11	5	12	13	8	1	9	3	10	3	3	11	6	13	5	12	1	1	12	13	12	11	10	9	8	7	6	5	4	3	2	1											
4	Chuen	Cib	Imix	Cimi	Imix	Cimi	12	6	13	1	9	2	10	4	11	4	4	12	7	1	6	13	2	3	13	12	11	10	9	8	7	6	5	4	3	2	1	0											
5	Etz	Calan	Ik	Manik	Ik	Manik	13	7	1	2	10	3	11	5	12	5	5	13	8	2	7	1	12	3	4	13	12	11	10	9	8	7	6	5	4	3	2	1	0										
6	Ben	Eznab	Akbal	Lamat	Akbal	Lamat	1	8	2	3	11	4	12	6	1	6	6	1	9	3	8	1	13	4	5	12	11	10	9	8	7	6	5	4	3	2	1	0											
7	Ix	Cauac	Kan	Muluc	Kan	Muluc	2	9	3	4	12	5	1	7	2	7	7	2	10	4	9	2	10	5	12	11	10	9	8	7	6	5	4	3	2	1	0												
8	Men	Chicchan	Chicchan	Oc	Chicchan	Oc	3	10	4	5	1	6	13	8	3	8	8	3	11	5	10	3	11	6	13	12	11	10	9	8	7	6	5	4	3	2	1	0											
9	Cib	Imix	Imix	Cimi	Imix	Cimi	4	11	5	6	2	7	1	9	4	9	9	4	12	6	11	4	12	7	1	13	12	11	10	9	8	7	6	5	4	3	2	1	0										
10	Eznab	Ik	Manik	Eb	Manik	Eb	5	12	6	7	3	8	2	10	5	10	10	5	13	7	12	5	13	8	2	13	12	11	10	9	8	7	6	5	4	3	2	1	0										
11	Kan	Akbal	Muluc	Lamat	Muluc	Lamat	6	13	7	8	4	9	3	11	6	11	11	6	1	9	4	13	8	3	1	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0									
12	Cauac	Kan	Oc	Ix	Oc	Ix	7	1	8	9	5	10	4	12	7	12	12	7	2	10	5	14	9	4	2	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0								
13	Ahan	Chicchan	Chicchan	Men	Ahan	Men	8	2	9	10	6	11	5	1	8	13	13	8	3	11	6	15	10	5	3	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0							
14	Imix	Cimi	Chuen	Calan	Chuen	Calan	9	3	10	11	7	12	6	2	9	1	1	9	4	11	7	16	11	6	4	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0						
15	Ik	Manik	Eb	Eznab	Eb	Eznab	10	4	11	12	8	1	7	3	10	2	2	10	5	12	8	1	12	7	5	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0					
16	Akbal	Lamat	Ben	Ix	Ben	Ix	11	5	12	1	9	2	8	4	11	3	3	11	6	13	9	2	13	8	6	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0				
17	Kan	Muluc	Imix	Cauac	Imix	Cauac	12	6	13	2	10	3	9	5	12	4	4	12	7	1	6	14	9	7	3	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0			
18	Chicchan	Oc	Men	Ahan	Men	Ahan	13	7	1	3	11	4	10	6	1	5	5	13	8	2	7	10	10	8	4	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0		
19	Cimi	Chuen	Cib	Imix	Cib	Imix	1	8	2	4	12	5	1	7	2	6	6	1	9	3	8	1	11	6	5	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	
20	Manik	Eb	Calan	Ik	Calan	Ik	2	9	3	5	1	6	2	8	3	7	7	2	10	4	9	2	12	7	6	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

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YEARS										Pop	Uo	Zip	Zou	Tye	Xul	Yaxkin	Mol	Chen	Yax	Zac	Ceh	Mac	Kanhin	Muan	Yax	Kayah	Cumhu	Uayeh						
49				36				23																					10					
Days				Days				Days																					Days					
1	Lamat	Ben	Eernal	Albal	10	4	5	12	0	13	9	1	10	1	0	3	10	4	7	11	13	0	10	8	10	13	1	1						
2	Muluc	Ix	Canac	Kan	11	5	10	13	7	2	1	2	11	2	10	4	11	10	12	13	0	2	1	1	1	2	2	2						
3	Oc	Men	Abau	Chirchun	12	6	1	8	8	3	0	3	10	4	11	5	10	13	13	0	2	1	1	1	1	2	2	2						
4	Chuen	Cib	Inik	Chim	13	7	2	9	9	4	1	4	11	5	12	1	11	14	1	1	3	2	1	1	1	2	2	2						
5	Ek	Caban	Ik	Manik	14	8	3	10	10	5	2	5	12	6	13	2	12	15	2	2	4	3	1	1	1	2	2	2						
6	Ben	Eernal	Albal	Lamat	15	9	4	11	11	6	3	6	13	7	14	3	13	16	3	3	5	4	1	1	1	2	2	2						
7	Men	Canac	Kan	Muluc	16	10	5	12	12	7	4	7	14	8	15	4	14	17	4	4	6	5	1	1	1	2	2	2						
8	Oc	Abau	Chirchun	Oc	17	11	6	13	13	8	5	8	15	9	16	5	15	18	5	5	7	6	1	1	1	2	2	2						
9	Chuen	Inik	Chim	Chuen	18	12	7	14	14	9	6	9	16	10	17	6	16	19	6	6	8	7	1	1	1	2	2	2						
10	Caban	Ik	Manik	Ek	19	13	8	15	15	10	7	10	17	11	18	7	17	20	7	7	9	8	1	1	1	2	2	2						
11	Eernal	Albal	Lamat	Ben	20	14	9	16	16	11	8	11	18	12	19	8	18	21	8	8	10	9	1	1	1	2	2	2						
12	Canac	Kan	Muluc	Ix	21	15	10	17	17	12	9	12	19	13	20	9	19	22	9	9	11	10	1	1	1	2	2	2						
13	Abau	Chirchun	Oc	Men	22	16	11	18	18	13	10	13	20	14	21	10	20	23	10	10	12	11	1	1	1	2	2	2						
14	Inik	Chuen	Chuen	Cib	23	17	12	19	19	14	11	14	21	15	22	11	21	24	11	11	13	12	1	1	1	2	2	2						
15	Ik	Manik	Ek	Caban	24	18	13	20	20	15	12	15	22	16	23	12	22	25	12	12	14	13	1	1	1	2	2	2						
16	Albal	Lamat	Ben	Inik	25	19	14	21	21	16	13	16	23	17	24	13	23	26	13	13	15	14	1	1	1	2	2	2						
17	Kan	Muluc	Ix	Chuen	26	20	15	22	22	17	14	17	24	18	25	14	24	27	14	14	16	15	1	1	1	2	2	2						
18	Chirchun	Oc	Men	Abau	27	21	16	23	23	18	15	18	25	19	26	15	25	28	15	15	17	16	1	1	1	2	2	2						
19	Chim	Chuen	Chuen	Cib	28	22	17	24	24	19	16	19	26	20	27	16	26	29	16	16	18	17	1	1	1	2	2	2						
20	Manik	Ek	Caban	Ik	29	23	18	25	25	20	17	20	27	21	28	17	27	30	17	17	19	18	1	1	1	2	2	2						

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YEARS					Pop	Uo	Zip	Zolt	Tacc	Xul	Yaxkin	Mol	Chen	Yax	Zac	Ceh	Mac	Kankin	Muan	Pas	Kayab	Cumhu	Mayab	
24		37		50																				
Days	Days	Days	Days	Days																				Days
1	Lamat	Ben	Ezenab	Akhal	11	12	6	13	1	1	3	0	0	0	10	4	11	11	7	13	0	12		
2	Muluc	Is	Caohé	Kan	12	6	11	7	2	8	3	10	0	10	5	11	0	13	13	7	1	13		
3	Oc	Men	Ahau	Chicchan	13	7	1	8	3	9	4	11	1	11	6	12	0	13	13	7	1	13		
4	Chuen	Gib	Imix	Cimi	1	8	2	9	4	10	5	12	2	12	7	13	1	13	13	7	1	13		
5	Eb	Caban	Ik	Manik	2	9	3	10	5	11	6	13	3	13	8	1	13	13	7	1	13	13		
6	Ben	Ezenab	Akhal	Lamat	3	10	4	11	6	12	7	1	4	14	2	2	13	13	7	1	13	13		
7	Is	Caohé	Kan	Muluc	4	11	5	12	7	1	8	2	5	15	3	3	14	13	7	1	13	13		
8	Men	Ahau	Chicchan	Oc	5	12	6	13	7	1	9	3	6	16	4	4	15	13	7	1	13	13		
9	Gib	Imix	Cimi	Eb	6	13	7	1	8	2	10	4	7	17	5	5	16	13	7	1	13	13		
10	Caban	Ik	Manik	Ben	7	14	8	2	9	3	11	5	8	18	6	6	17	13	7	1	13	13		
11	Ezenab	Akhal	Lamat	Is	8	15	9	3	10	4	12	6	9	19	7	7	18	13	7	1	13	13		
12	Caohé	Kan	Muluc	Men	9	16	10	4	11	5	13	7	10	20	8	8	19	13	7	1	13	13		
13	Ahau	Chicchan	Oc	Cib	10	17	11	5	12	6	14	8	11	21	9	9	20	13	7	1	13	13		
14	Imix	Cimi	Chuen	Chen	11	18	12	6	13	7	15	9	12	22	10	10	21	13	7	1	13	13		
15	Ik	Manik	Eb	Caban	12	19	13	7	1	8	16	10	13	23	11	11	22	13	7	1	13	13		
16	Akhal	Lamat	Ben	Ezenab	13	20	14	8	2	9	17	11	14	24	12	12	23	13	7	1	13	13		
17	Kan	Is	Caohé	Is	14	21	15	9	3	10	18	12	15	25	13	13	24	13	7	1	13	13		
18	Men	Ahau	Chicchan	Men	15	22	16	10	4	11	19	13	16	26	14	14	25	13	7	1	13	13		
19	Gib	Imix	Cimi	Gib	16	23	17	11	5	12	20	14	17	27	15	15	26	13	7	1	13	13		
20	Manik	Eb	Caban	Is	17	24	18	12	6	13	21	15	18	28	16	16	27	13	7	1	13	13		

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YEARS					Pop	Uo	Zip	Zotz	Trec	Xul	Yaxkin	Mol	Chen	Yax	Zac	Ceh	Mac	Kankin	Moan	Fax	Kayab	Cumhu	Uayab
12	25	38	51	Days																			
	Days	Days	Days	Days																			
1	Lamat.	Ben	Ezemab	Akhal.	12	6	13	9	1	8	10	4	10	4	10	11	7	10	13	13	10	11	10
2	Muhuc	Ik	Cauac	Kan.	13	7	1	9	2	9	11	5	11	5	11	8	8	13	13	10	11	10	9
3	Oc	Men	Ahan	Chicchan	1	8	2	10	3	10	11	6	12	6	12	9	9	7	10	13	10	11	10
4	Chuten	Cib	Imix	Ciml	2	9	3	11	4	11	12	7	13	7	13	10	10	6	13	13	10	11	10
5	Eb	Caban	Ik	Manik	3	10	4	12	5	12	13	8	14	8	14	11	11	11	6	13	10	11	10
6	Ben	Ezemab	Akhal	Lamat	4	11	5	13	6	13	14	9	15	9	15	12	12	11	6	13	10	11	10
7	Ik	Cauac	Kan	Muhuc	5	12	6	14	7	14	15	10	16	10	16	13	13	12	6	13	10	11	10
8	Men	Ahan	Chicchan	Oc	6	13	7	15	8	15	16	11	17	11	17	14	14	13	7	10	13	10	9
9	Cib	Imix	Ciml	Chuen	7	14	8	16	9	16	17	12	18	12	18	15	15	14	8	13	10	11	10
10	Caban	Ik	Manik	Eb	8	15	9	17	10	17	18	13	19	13	19	16	16	15	9	14	11	10	9
11	Ezemab	Akhal	Lamat	Ben	9	16	10	18	11	18	19	14	20	14	20	17	17	16	10	15	12	11	10
12	Cauac	Kan	Muhuc	Ik	10	17	11	19	12	19	20	15	21	15	21	18	18	17	11	16	13	12	11
13	Ahan	Chicchan	Oc	Men	11	18	12	20	13	20	21	16	22	16	22	19	19	18	12	17	14	13	12
14	Imix	Ciml	Chuen	Cib	12	19	13	21	14	21	22	17	23	17	23	20	20	19	13	18	15	14	13
15	Ik	Manik	Eb	Caban	13	20	14	22	15	22	23	18	24	18	24	21	21	20	14	19	16	15	14
16	Akhal	Lamat	Ben	Ezemab	1	21	15	23	16	23	24	19	25	19	25	22	22	21	15	20	17	16	15
17	Kan	Muhuc	Ik	Cauac	2	22	16	24	17	24	25	20	26	20	26	23	23	22	16	21	18	17	16
18	Chicchan	Oc	Men	Ahan	3	23	17	25	18	25	26	21	27	21	27	24	24	23	17	22	19	18	17
19	Ciml	Chuen	Cib	Imix	4	24	18	26	19	26	27	22	28	22	28	25	25	24	18	23	20	19	18
20	Manik	Eb	Caban	Ik	5	25	19	27	20	27	28	23	29	23	29	26	26	25	19	24	21	20	19

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YEARS						Pop	U6	Zip	Zotz	Tacc	Xul	Yaxkin	Mol	Chen	Yax	Zac	Ceh	Mac	Kaukin	Muan	Pax	Kayab	Cunhu	Uyeyb
13	26	39	52	Days																				
1	Lamat.....	Ben.....	Eznab...	Akbal....	Akbal.....	13	7	7	8	3	9	10	4	11	5	13	11	13	7	1	8	10	9	
2	Muluc.....	Ix.....	Cauc....	Kan.....	Chicchan..	1	8	9	9	3	10	4	11	5	13	12	13	8	2	9	10	11		
3	Oc.....	Men.....	Ahan....	Gimi.....	Chicchan..	2	9	10	4	11	5	13	12	13	1	13	9	3	10	11	12	13		
4	Chuen.....	Cib.....	Imix.....	Gimi.....	Chicchan..	3	10	11	5	13	12	13	1	8	2	9	10	4	11	5	13	12		
5	Eb.....	Caban....	Ix.....	Manik....	Chicchan..	4	11	12	6	13	7	1	8	2	9	10	4	11	5	13	12	13		
6	Ben.....	Eznab....	Akbal....	Lamat....	Chicchan..	5	12	13	7	1	8	2	9	10	4	11	5	13	12	13	1	8		
7	Ix.....	Cauc....	Kan.....	Muluc....	Chicchan..	6	13	7	1	8	2	9	10	4	11	5	13	12	13	1	8	2		
8	Men.....	Ahan....	Gimi.....	Chuen....	Chicchan..	7	1	8	2	9	10	4	11	5	13	12	13	1	8	2	9	10		
9	Cib.....	Imix.....	Chicchan..	Chuen....	Chicchan..	8	2	9	10	4	11	5	13	12	13	1	8	2	9	10	11	12		
10	Caban....	Ix.....	Manik....	Eb.....	Chicchan..	9	3	10	4	11	5	13	12	13	1	8	2	9	10	11	12	13		
11	Eznab....	Akbal....	Lamat....	Ben.....	Chicchan..	10	4	11	5	13	12	13	1	8	2	9	10	11	12	13	1	8		
12	Cauc.....	Kan.....	Muluc....	Ix.....	Chicchan..	11	5	12	6	13	7	1	8	2	9	10	11	12	13	1	8	2		
13	Ahan.....	Chicchan..	Oc.....	Men.....	Chicchan..	12	6	13	7	1	8	2	9	10	4	11	5	13	12	13	1	8		
14	Imix.....	Cib.....	Chuen....	Cib.....	Chicchan..	13	7	1	8	2	9	10	4	11	5	13	12	13	1	8	2	9		
15	Ix.....	Manik....	Eb.....	Caban....	Chicchan..	1	8	2	9	10	4	11	5	13	12	13	1	8	2	9	10	11		
16	Akbal....	Lamat....	Ben.....	Eznab....	Chicchan..	2	9	10	4	11	5	13	12	13	1	8	2	9	10	11	12	13		
17	Kan.....	Muluc....	Ix.....	Cauc....	Chicchan..	3	10	11	5	13	12	13	1	8	2	9	10	11	12	13	1	8		
18	Chicchan..	Oc.....	Men.....	Ahan....	Chicchan..	4	11	12	6	13	7	1	8	2	9	10	11	12	13	1	8	2		
19	Gimi.....	Chuen....	Cib.....	Imix.....	Chicchan..	5	12	13	7	1	8	2	9	10	4	11	5	13	12	13	1	8		
20	Manik....	Eb.....	Caban....	Ix.....	Chicchan..	6	13	7	1	8	2	9	10	4	11	5	13	12	13	1	8	2		

PRELIMINARY SKETCH OF THE MOHAVE INDIANS

By A. L. KROEBER

The following account, published by permission, is a preliminary sketch of the Mohave tribe, based largely on investigations made early in 1902 for the Department of Anthropology of the University of California, as part of the anthropological research of California made possible through the munificence of Mrs Phoebe A. Hearst. The tribe had also been visited by the writer for a short time in 1900, in behalf of the California Academy of Sciences.

The country of the Mohave lies along both sides of Colorado river, where that stream forms the boundary between Arizona and California, for about two days' journey southward from the southernmost part of Nevada. The surrounding country is a desert. Considerable areas along the river, however, are inundated annually and are thus fitted for agriculture.

The Mohave thus live not very far from such typical tribes of the Southwest as the Pueblos, the Navaho, and the Apache, nor, on the other hand, from the much-divided tribes of the coast and interior of California. Their intermediate geographical position is exemplified by the fact that their narrow strip of country lies half in Arizona and half in California.

The Mohave hunted little. They fished more. They raised the usual products of the agricultural tribes of the arid region of the United States—corn, pumpkins, melons, and beans. They also gathered and ate mesquite beans, mesquite screw, and other wild food products of the country.

The various tribes of this arid and semi-arid region differed considerably in the food on which they lived. There seems to

have been a prejudice against any food which was not customary, even though it were obtainable. The Mohave did not eat the lizards and turtles which the neighboring Paiute ate; they were afraid of beaver, which the Maricopa hunted and ate; and they are said to have been unwilling to eat some of the wild seeds on which other tribes partly subsisted. On the other hand, the Walapai, it is said, refused to eat fish. This tendency led to specialization along certain lines of food-procuring instead of the utilization of all possible means of subsistence which the country scantily afforded.

The Mohave had no large settlements: their dwellings were scattered. Their houses were four-sided, slightly rounded, low, and with the door to the south. In the center were four posts. The walls, which were only two or three feet high, and the gently sloping roof, were formed of brush entirely covered with sand. They had nothing corresponding to the kiva of the Pueblos or the sweat-house of the Californians, nor any special buildings for ceremonial purposes. The larger living houses, however, resembled the Californian sweat-house in that they served as places of assembly at night, that a fire was built in them and the entrance closed, that there was no smoke hole, and that the people slept on the sand without blankets.

Articles of skin or bone were very little used, vegetal materials taking their place. The inner bark of the willow, from which the skirts of the women were made, served several other purposes. String was made from bean fibers. Pottery was made in considerable quantities. Baskets were much used, and are still to be found in nearly every house. They were however not made by the Mohave, but obtained from other tribes. Rabbit-skin blankets, which are also common, were bought from the Paiute and Walapai. There thus appears to be a tendency among the tribes of this region to confine their industries to much narrower lines than circumstances enforce, analogous to the similar tendency in regard to food.

The Californian tribes, so far as known, all lack any gentile or totemic system. Among the tribes of the Southwest it is a marked feature of the social organization. Among the Mohave there is no full gentile system, but something closely akin to it, which may be called either an incipient or a decadent clan system. Certain men, and all their ancestors and descendants in the male line, have only one name for all their female relatives. Thus, if the female name hereditary in my family be Maha, my father's sister, my own sisters, my daughters (no matter how great their number), and my son's daughters, will all be called Maha. There are about twenty such women's names, or virtual gentes, among the Mohave. None of these names seems to have any signification. But according to the myths of the tribe, certain numbers of men originally had, or were given, such names as Sun, Moon, Tobacco, Fire, Cloud, Coyote, Deer, Wind, Beaver, Owl, and others, which correspond exactly to totemic clan names; then these men were instructed by Mastamho, the chief mythological being, to call all their daughters and female descendants in the male line by certain names corresponding to these clan names. Thus the male ancestors of all the women who at present bear the name Hipa, are believed to have been originally named Coyote. It is also said that all those with one name formerly lived in one area, and were all considered related. This, however, is not the case now, nor does it seem to have been so within recent historic times. It should also be added that many members of the tribe are not aware of the connection between the present women's names and the totemic names of the myth.

War was looked upon and practised more in the way of the Southwestern and Plains tribes, than as by the Californians. It was an opportunity for distinction and gain rather than a matter of necessity or revenge. The bravest fighters became chiefs. Chieftainship was also hereditary in the male line. The present head-chief of the whole tribe is a young man.

In spite of a loose internal social organization, the tribe seems

to have regarded itself as very distinct from all others. The conscious feeling of the tribe as a unit or body, such as exists so strikingly among the Plains Indians, is however not so strong among the Mohave as a feeling that all members of the tribe are inherently and psychically different from all persons of other tribes. There is a sense of racial rather than of tribal separateness. Marriages with other tribes were few. Not only sexual connection but ordinary intercourse with other races were regarded with disfavor, as being a specific cause of sickness. Among the races thus to be shunned were included not only the whites, and all tribes of other linguistic relations, but some of the tribes speaking kindred Yuman languages, such as the Walapai. This sense of racial aloofness recalls what McGee tells of the Seri.

The religion of the Mohave consists far more of individual relations with the supernatural than of tribal or fraternal ceremonies. This is a Californian trait, and is the reverse of what exists in the Southwest. The medicine-man acquires his powers by dreaming. Seeking for dreams or other revelations by means of fasting, privation, isolation, petition, or some form of training, does not seem to be practised. The dreams that give supernatural powers or knowledge, are supposed to occur before birth and in infancy. Most medicine-men receive their powers directly from Mastamho, the chief deity. In their intercourse with him, he teaches them songs and ceremonial practices. Success in hunting is acquired by dreaming of two deities, who are probably the wild-cat and the puma. The Mohave ascribe the superiority of other tribes to themselves in hunting to the fact that such tribes dream habitually of these two beings. Other beings or objects also are the source of supernatural powers by being dreamed of.

In doctoring sickness, medicines are said never to be used. The chief means employed are singing, laying on of hands, and blowing accompanied by a spray of saliva. The songs describe the acquisition of the supernatural power which is being used; in other words, the instruction by Mastamho. Therefore they usu-

ally describe also the action which is being performed in accompaniment to the song. Such seems to be the sense of the songs used with all ceremonies.

But dreaming is of far wider importance than in the making of a medicine-man. Nearly all ceremonies are performed because they have been dreamed (that is, supernaturally received), not by some one in the indefinite past of tradition, but by one of the living performers. All the myths and even the more historical legends of the tribe are supposed to be known to those who tell them not because they have heard and learned them, but because they have seen the events themselves in their dreams. Every story-teller is emphatic on this point. Not infrequently the narrator of a myth lapses into the first person and tells what he saw instead of narrating impersonally.

Moreover, it is dreams that are the cause of everything that happens. If one dreams of riches, he will be rich. If one dreams that he has gone to the sand-hills, the abode of the dead, he will die. In short, whatever is dreamed of will come to pass. "Good luck" is expressed by "good dreaming." Many dreams exactly resemble the event which follows them; some are interpreted symbolically. One may dream of being bitten by a rattlesnake, or one may dream that fire falls on his finger; in either case, an actual rattlesnake bite will be the result. Sickness is caused by dreaming that one is sick. The belief in witchcraft as a cause of sickness, which, while found everywhere, seems to be more developed in California than elsewhere in North America, also exists. It is sometimes combined with the belief in dreams as the cause of sickness: the medicine-man who is the cause of a disease is dreamed of by the person who is his victim, as being in the act of making him sick.

The importance of dreams in the religion of the Mohave is unusually great, and probably finds no parallel in any other region of the continent. A similar development may of course be expected among some of the adjacent little-known tribes.

The dead are burned. Mourning for the dead takes a ceremonial form. Besides weeping and speaking, there are singing and a form of dancing. Ceremonial speeches are also made by certain men who have received the requisite knowledge in dreams. This ceremony resembles the mourning ceremonies found throughout California, but is remarkable for being performed in greater part immediately before the death of the dying person. Very soon after death the body is burned. In the case of the death of a chief, a more elaborate and spectacular ceremony is held about a year after his death, and is attended by neighboring tribes. This rite seems to be a form of the ceremony, occurring annually or at periods of several years, which is found through a large part of California, and is known as the "dance of the dead" or "cry."

Besides the mourning ceremonies, and a scalp dance, the several other ceremonies of the Mohavé are described as being alike in general character. They are called salt-singing, crow-singing, cane-singing, turtle-singing, and a number of other kinds of singing the meaning of whose names has not been ascertained. They are ceremonies mostly lasting one night and held indoors. Some are accompanied by dancing and some are not. Few if any regalia or implements peculiar to the ceremony are used. The entire ceremony is under the direction of an individual who has dreamed of the object after which the singing is named. Salt, for instance, is a person, whom some men see in their dreams, and who teaches them the songs for the salt-ceremony. The making of these ceremonies is thus not open to anyone in the tribe, as is for instance the sun-dance of the Plains Indians, but only to certain men who have had the necessary supernatural qualification. In this there is a suggestion of the ceremonial societies of the Pueblo Indians; but it should be remembered that the various individuals who may have dreamed and learned the same ceremony are not organized into a society; further, that they have not been initiated or taught, but have individually acquired the ability to conduct the ceremony. The object of

these ceremonies is to give the participants good health. The same songs are however used also as part of the mourning ceremony. Somewhat similarly, among the Sia the religious society to which a man belonged holds a ceremony peculiar to itself at his death.

In all ceremonies, even in the doctoring of the medicine-man, and in all myths, the sacred or ceremonial number is four. Seven does not occur in this function.

On the whole the ceremonies of the Mohave are quite different from those of the Pueblos and Navaho, and rather resemble those of California. They are all simple. Masks do not seem to be used, and other ceremonial paraphernalia are very few and slight. The ritual shows neither the elaborateness nor the exactness of those of the Southwestern tribes.

The highly developed symbolism which is so marked both in the beliefs and in the ceremonial practices of the Pueblos and Navaho, and which has recently been shown to exist not less strongly among the primitive Huichol tribe far in Mexico, is almost altogether wanting among the Mohave. There is certainly much less of it among them than among the nomadic Plains tribes. Absence of this highly characteristic symbolism is also a feature of all Californian cultures.

Allied in spirit to this symbolism, as also to the ceremonialism, is the fetishism which the Pueblo and Mexican tribes carry so far. It seems to be as nearly wanting among the Mohave as among the Californian Indians generally. It is a commentary on the use of the terms high and low in the scale of civilization, that the Pueblos, regarded as the most highly civilized of American Indians north of Mexico, have carried fetishism to its greatest development, while the simple and primitive Californians, called the lowest of the peoples of the continent, are almost free from it.

The Mohave obey certain restrictions and use certain ceremonies in connection with death, birth, menstruation, and certain occupations. After a death, there is a four-day period of obser-

vances for the mourners. At a girl's first menstruation, those actions which must and those which may not be performed are numerous; many of the acts gone through are symbolic of, and are regarded as causative of, the girl's future,—much as has been noted in other regions. The whole body of these restrictions, too numerous to specify in detail, is entirely analogous in its scope and its idea, and often very similar in particular points, to the practices observed by the Indians of California, of the North Pacific coast, of the interior of British Columbia, and by all the Eskimo. Such restrictions and regulations, though they are not wanting, are less developed among the Plains Indians, and probably also among the Southwestern tribes.

The mythology of the Mohave can with difficulty be summarized. Like the Pueblo and Navaho myths, it is a long tribal history, mythical in its nature, but lacking in striking mythic incident. The Sky and the Earth begot all beings and men, among them being Matevilye and his younger brother Mastamho. Both of these names have no known meaning. Matevilye died through the instrumentality of the Frog, his daughter. Mastamho in course of time made the Colorado river, produced light, shaped the land, saved the people from flood, separated the tribes, taught agriculture, and instituted the clans. He still is the source of most supernatural power. A longer migration legend follows the long creation myth. Leaving their country, the Mohave after a circuitous slow journey of years began to return to it in separate bands, and fought with the tribes who occupied it, until finally they resettled it. This story is told with much detail of name and place, having at times an historical appearance; it contains a mythical element only in parts. It also has further reference to the quasi-clans that were instituted by Mastamho. In essence the creation myth may be described as a history of the people under a great supernatural leader; in the course of their guidance by him, the world was made as it is now. The migration legend is a subsequent history of the people in several

divisions under great human leaders. In its fundamental nature the mythology of the Mohave thus resembles closely the mythologies of the Zuni, Sia, and Navaho.

In California, creation myths are found much more prominently than among the Plains and Eastern tribes or the North Pacific coast Indians. On the other hand, they differ from the Southwestern creation myths in that they are not primarily a pseudo-history of the tribe with an incidental cosmogony, but treat directly of the events that made the world, especially nature, as it is. A Californian creation myth is a loosely connected series of distinct episodes in the life of the creator or the two creators. A Southwestern creation myth has much more coherence and consists more largely of comparatively matter-of-fact incidents than any corresponding myth from California, the North Pacific coast, or the Plains. In all these respects the affiliations of Mohave mythology are with the Southwest. A Californian trait, however, is the prominence of the single character and virtual creator Mastamho.¹

The art of the Mohave consists chiefly of crude painted decorations on their pottery. These decorations are never realistically carried out; generally they are conventional designs, which in their simplicity and their geometric rudeness of representation differ little from the basket patterns of California. As elsewhere, animal and in some degree plant designs are found. Rain, cloud, and rainbow patterns remind one of the rain symbolism connected with the rain-cults of the tribes of the Southwest. Most characteristic of the Mohave pottery designs are those representing various styles of tattooing and of painting the face; these designs are very frequent.

¹ A very fragmentary and disjointed account of Mohave mythology has been given by J. G. Bourke (*Journal of American Folk-Lore*, II, 169). The mythology of the Diegueños of southern California, also of Yuman stock (C. G. Du Bois, *ibid.*, XIV, 181), shows certain resemblances to that of the Mohave; the published material, however, is too incomplete to give much idea of the character of the mythology as a connected body.

The cultural affiliations of the Mohave are thus evidently, as one might expect from their general geographical position, about equally divided between the Southwest and California. In view, however, of the fact that their habitat forms part more properly of the distinctively arid Southwestern region than of California, and that they associate more with the tribes to their east than with those of California proper, it is somewhat remarkable that they resemble the Californians so much as they do. The most distinctive feature of the culture of the Mohave seems to be the high degree to which they have developed their system of dreaming and of individual instead of traditional connection with the supernatural.

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In Memoriam

THOMAS WILSON¹

The inevitable hour has struck for one of our colleagues, the late Thomas Wilson, Curator of the Division of Prehistoric Archeology in the National Museum, and it is fitting that the Anthropological Society of Washington turn aside from its wonted proceedings to pay its respects to his memory, to show its sympathy with his stricken family, and to learn the lesson of this most solemn of human events.

You hear a bell toll in the night, at first with startling resonance, which dies by degrees into mute and eternal silence: a stone is dropped on the smooth surface of a placid lake, and after the sudden splash and the ever-widening and weakening ripples, all is dead calm again. The silence and the calm follow,—and the air and the waters have no memory.

You may have heard it said that the dead are in like manner soon forgotten;—there are the knell, the pall, the bier,—and then oblivion. But this thought is alike hurtful and unjust to the dead as it is to the living. Who among you are able or willing to erase from the intellectual records of the past the thoughts of our own fallen ones? Toner, Seely, Dorsey, Mallery, Pilling, Goode, and Cushing—are not their faces at this moment vividly portrayed on the walls of memory? Their voices we hear again and again like sympathetic music,

And we are filled with wonder how
Or whence it has its springs.

¹ Presented by Dr Otis T. Mason at a meeting of the Anthropological Society of Washington, May 20, 1902.



THOMAS WILSON - 1832-1902

But it does sound so near,
We fancy we can almost hear
The fingers sweep the strings.

And now another comrade has passed out of the world of sense into the world of memory. Recall his stalwart form, his strong face, his pleading voice, his air, his spirit. If any question whatever concerning his science were now to arise, it would not be difficult to guess the side on which he would array himself. And there are as many memories as there are relations in life. Since each stands to each at varying distances and in different light, the individual recollections concerning our friend will be infinitely varied in color and tone. They are like a collection of portraits or photographs of the same person in different dress and at various periods of his life.

But there is another safe depository of the treasures and deeds of those that are dead; it may be called the institutional memory. Societies are organizations for remembering; they are the recording angels that keep the books of fate; they are like the Omniscient mind. It is possible to hold one's tongue, to lay aside one's pen, to fold one's hands, but it is not possible to blot one's name from this book of remembrance. If men have thoughts and utter them; have messages to deliver and record them: have searched for treasures or knowledge and found them, then the social mind and memory weigh them, label them, and put them in their treasure house. I will dwell on the thought at this transcendent moment because I am enamored of the life-in-common.

From one point of view it seems to extinguish our individuality. But a single glance at nature exalting each part through the whole teaches the lesson that our only hope of true and lasting influence is through the social keeper of archives. Our dead colleague's family will treasure his domestic virtues; his friends will not soon forget his abundant hospitality and good cheer; his fellow citizens are preserving the records of his services to art, education, and the commonweal; and to us comes the inevitable

function of justly appreciating his thoughts and utterances concerning the natural history of man.

Dr Thomas Wilson died in Washington on May 4, 1902, in the seventieth year of his age. He was born in New Brighton, Beaver county, Pennsylvania, of Quaker parentage. Both on his father's and his mother's side he was of North England race, having in his composition both Scottish blood and predilections. In his career he was an example of American life,—born on a farm, practised in a mechanic's trade, instructed in law, devoted to politics, a soldier, a successful man, a representative of his government abroad, a friend of science.

Dr Wilson was born in sight of a mound and may be said to have grown up in the remotest past. In his subsequent residence at Marietta, Ohio; Troy, Illinois; St Louis, Missouri; Marshall county, Iowa, the remains and relics of ancient American aboriginal life were never out of his sight. From this early training, and after retiring from his profession, he was, in 1881, appointed Consul at Ghent, Belgium, and afterward transferred to Nantes and Nice. In the first named place he was at once in touch with the cave man and the cave bear of the Moustérian epoch. The skeleton of the latter in his hall at the National Museum is a trophy of his enthusiasm. His stay at Nantes brought him into immediate connection with the megalithic monuments at Brittany and the marvelous collection of cave life in the Garonne region at the south. At Nice he was easily in reach of Switzerland, Italy, and southern France. After five years of consular service, Doctor Wilson spent two years traveling over Europe, exploring and studying wherever there was a new prehistoric station to be opened or a collection to be examined. During the official period he was constantly on the lookout for knowledge beneficial to his countrymen. He made exhaustive reports to the State Department on the Treaty of Ghent, the reclaiming of lands in the Netherlands, postal savings institutions, marriage of American girls to citizens of France, and more.

In the entire seven years of residence abroad archeology was his lure. With untiring zeal, accompanied by Mrs Wilson, you saw him exploring caves and cemeteries, measuring the monoliths of Brittany, tramping over Scandinavia and the British Isles, looking down through the glass bottom of his boat upon the remains of Swiss lake cultures, searching for hidden treasures in Etruscan tombs, and all the while taking notes, gathering photographs and publications, and collecting substantial specimens of man's ancient handicraft. At the same time he was mindful always of the archeology of thought as preserved in folklore, his only privately published volume being *Gilles de Retz, or Bluebeard*.

In 1887 Dr Wilson succeeded Dr Charles Rau as Curator of Prehistoric Archeology in our National Museum. Besides the routine of administration, he published monographs, assisted in expositions, and gave public lectures on anthropological subjects. The following is a list of his official papers:

- 1888. *A Study of Prehistoric Anthropology: Handbook for beginners.* (Annual Report of the U. S. National Museum.)
- 1888. *Ancient Indian Matting from Petit Anse Island, La.* (Report, U. S. N. M.)
- 1888. *Man in North America during the Palaeolithic Period.* (Report, U. S. N. M.)
- 1888. *Exhibit made by the Department of Prehistoric Anthropology at the Cincinnati Exposition, Cincinnati.* (Report, U. S. N. M.)
- 1888. *Circular Relating to Prehistoric Anthropology.*
- 1890. *Anthropology at the Paris Exposition in 1889.* (Report, U. S. N. M.)
- 1891. *Minute Stone Implements from India.* (Report, U. S. N. M.)
- 1891. *The Palaeolithic Period in the District of Columbia.* (Proceedings, U. S. N. M.)
- 1894. *The Golden Patera of Rennes.* (Report, U. S. N. M.)
- 1894. *The Swastika, the Earliest Known Symbol, and its Migrations.* (Report, U. S. N. M.)
- 1895. *The Antiquity of the Red Race in America.* (Report, U. S. N. M.)
- 1896. *Prehistoric Art.* (Report, U. S. N. M.)
- 1898. *Arrowpoints, Spearheads, and Knives.* (Report, U. S. N. M.)

We have here the born archeologist, the trained lawyer and special pleader, the consul working for the commonweal, and the graduate of European methods. The creators of this science in Great Britain, Norway, Sweden, Denmark, Belgium, France, Spain, Italy, Switzerland, and Germany, whose works we study and admire, were his personal friends, and they honored him with membership in their societies. Among the scientific organizations with which he was associated are the Anthropological Society of Washington (of which he was a vice-president for many years), the American Folk-Lore Society, the Société d'Anthropologie de Paris, the Anthropological Institute of Great Britain and Ireland, the Société d'Anthropologie de Bruxelles, the Société d'Archéologie de Nantes, and the Archeological and Asiatic Association of Nevada, Iowa. He was also a fellow of the American Association for the Advancement of Science, a member of the Military Order of the Loyal Legion and of the American Oriental Society, a commander of the Order of Isabella of Spain, and an officer of the Order of Leopold.

Dr Wilson was easily the best informed man in our Society on prehistoric and protohistoric Europe, from the rude flints of Thenay, in Loir et Cher, to the relics of Waben, in Pas de Calais; from the Eolithic period to the Merovingian; in the Age of Stone, of Bronze, and of Iron; in Tertiary, Quaternary, and recent times. He knew the vocabulary of technic in each one, and it was delightful to hear him talk about "*le coup de poing*," "*les pointes a main*," and "*racloirs*," about "*pointes en feuille de laurier*," "*burins en silex*," and the rest. He would have been more than human if this foreign training had not dominated and guided all his subsequent opinions and utterances. And so he was, in company with eminent colleagues in both hemispheres, convinced that, but for our ignorance, we should be able in the Western world to look back over the perspective of human history from the crowning elevation of the Twentieth Century to the first monument or relics of humanity.

I should be unfaithful to my duty if I did not extend on my own behalf and for this Society our sympathies to Mrs Wilson, who was the sharer of all her husband's labors and enthusiasm.

Into the outer court of private memories Dr Wilson has passed; he has ascended the steps of the inner court of civic memories, as man of affairs, patron of art and charity, diplomat, and soldier; in the holy place of family life are kept burning the recollections of husband, father, brother; and with bared feet he has stood alone in the holy of holies, as you and I must stand, to make an offering of his life work to the court of last human appeal, the judgment and conscience of organized and trained historic science.

BOOK REVIEWS

Homeric Society. A Sociological Study of the Iliad and Odyssey. By ALBERT GALLOWAY KELLER, Ph.D. New York and London: Longmans, Green & Co., 1902.

In an article on "Contemporary Sociology" in the *American Journal of Sociology* for March, 1902, I ventured this remark: "I have sometimes thought that more could be extracted from literature than is commonly supposed. If the early literature, like that of Greece and Rome, of India, Egypt, Persia, Syria, and China, could be thoroughly sifted for social facts, the labor, though great, would be well repaid. Such writers did not intentionally inform the world as to the industrial, economic, and social condition of the ages and countries in which they lived and wrote, but on every page occur words that are full of meaning for the sociologist who will carefully weigh them and learn what they imply" (p. 641). While that article was in press the present little book came into my hands. Judging from it there seems reason to think that Professor Sumner and his assistants at Yale are working somewhat along that line. This work, certainly, which, the author says, "is modelled on the as yet unpublished system of Professor Sumner," aims to accomplish for the Homeric literature the purpose outlined in the passage quoted. On the whole it may be said to have been successful in this, although the treatment is much too brief to do justice to the theme. An entire volume might well have been devoted to the industrial and economic aspects which are treated in one chapter (chap. II) of 72 pages, or at most to that and the very short chapter on Property (chap. IV), which two cognate subjects are here illogically separated by the long chapter on Religious Ideas and Usages, with which the world is already comparatively familiar. Marriage and the Family (chap. V) is also much underdone, while Government, Classes, Justice, etc. (chap. VI) receive a fairly proportionate treatment.

A careful reading of this work, however, affords a pretty good picture of the Homeric Greeks as a race. They were the result of the natural process of race amalgamation shown by Gumplowicz (with whom our author is acquainted) to be almost universal, at least throughout the Old World, brought about by the conquest of an inferior by a superior

race. In this case the superior race was "a detachment of those nomadic conquerors who ever and anon swept forth from the plains of central Asia, infusing fresh blood and vigor into the societies with which they came into contact." The native races were mostly enslaved, but the women were largely made concubines of the conquerors, which insured a complete mixing of the blood. The resultant Greek and Trojan race occupied in Homer's time about the second status of barbarism. We are so accustomed to think of the Greeks as a highly civilized race of men that this may sound strange. But in talking about the Greeks we entirely lose the perspective and ignore the immense difference between the Greece of Homer and the Greece of Pericles or Aristotle. It is something like confounding the age of King Arthur with that of Queen Victoria.

The Homeric Greeks rated themselves as an inferior race, and looked to the far East for culture and refinement. They were an advanced race only in a relative sense, when, for example, they compared themselves with the Cyclopes and Læstrygonians, who were reputed to be cannibals. The culture of the East was brought to Greece chiefly through the Phœnicians (Phœnicians), who were the traders of the world, and therefore despised, but upon whom the Greeks were wholly dependent for all civilizing elements. Most manufactured or artificial products were brought from the East by the Phœnicians, but the Greeks could exchange for them fabrics, especially linen, papyrus-made articles, wines, oil, and certain prepared spices, incense, perfumes, dyes, drugs, etc., the raw materials for which came mainly from Egypt. Cattle were the chief staple, but cows were not milked. Sheep and swine were also common. Horses were used only for travel and in war, and in the latter case were never ridden, but always harnessed to war chariots. "Fowls were kept as pets, and eggs are not mentioned." Early as is the potter's art everywhere, it seems to have been nearly unknown in Greece at that date, but baskets were woven. Counting and reckoning were done on the fingers by the decimal system. There was no alphabet, and hence no written language; and the Homeric legends were simply traditional poems handed down from generation to generation through the properly appointed priests or guardians of them who learned them by heart and transmitted them to their successors until the time when there had been invented a means of permanently recording and preserving them. How much they lost or gained by this process will never be known, nor will it ever be known who Homer was or whether there ever was such a particular man.

There was no circulating medium, and the ox was the standard of

value. Property was wholly insecure and every man must defend his own by force. Theft was honorable if successful, and murder for booty was legitimate, and to be avenged by the relatives of the murdered man. The author has logically classed marriage after property, for marriage was only a mode of transferring property in women. All women were property, and most of them were slaves. The rulers and men of influence had one wife belonging to the noble class whom they bought with presents, and as many concubines as they wanted whom they could barter at will. Women had no rights or privileges and were only occasionally allowed to appear at sacrifices. "Adultery in Homer is, as usual in early societies, assimilated to theft, and is reprehended as the violation of a property-right." A female slave "who knew many works" was valued at four oxen.

Skilled labor and all productive work was honorable, and the greatest men worked and boasted of it. But work for a wage was detestable, and the wage-worker was far worse off than a slave. Of course the wage must consist chiefly in food and raiment, for what could the discharged laborer do with an ox? Mercantile business was severely condemned as mean, and was left almost entirely to the Phœnicians who would penetrate the country and peddle their wares.

Homeric society was a nearly pure patriarchy. Daughters were promised and married (sold) by their fathers with no thought of consulting them. The principal wife was only "head-servant, an overseer of the female slaves; women, even princesses, made and washed the clothing of the family."

Much is said of hospitality or guest-friendship, and nothing was considered more base than to turn away or ill-treat a stranger who chanced to pass by on his travels. This custom is almost universal in races at about this stage of culture. To understand it it is only necessary to remember how undeveloped were the means of getting about the world in those days. The appearance of a traveler must have been a rare occurrence, and aside from the interest in seeing a new face and hearing reports from a distance when all communication with the outside world is thus cut off, there is the fact that without such hospitality there could be no such thing as travel. Anyone attempting it would certainly perish in a few days after leaving his home. There were no sources of supplies along the road, no places to sleep, should the weather be inclement. The custom of taking in strangers in such a country, therefore, may be looked upon as little more than a substitute for hotels.

Religion with the Homeric peoples was an almost purely economic institution. It was looked upon as a means of averting the evils that

would otherwise be visited upon man by offended gods. The gods were not loved, but only feared, and only through propitiation was it hoped to avoid the consequences of their wrath. This was a somewhat expensive necessity, and every means and artifice was resorted to to deceive the gods and avoid expense. Already in Homer's time sacrifices, although performed with great pomp and ceremony, had come to consist largely in fictions. The sacrifice of a whole hecatomb before a vast assembly was a performance strongly suggesting a modern barbecue. Some wine was wasted in gingerly libations, but most of it was drunk, and the share of the meat that ultimately fell to the gods was very small indeed. The bulk of it was eaten and apparently much relished by the assembled multitude.

Their beliefs about the soul were an almost pure form of animism. It is as well described by Tylor under that name and by Spencer in his ghost-theory as by Homer or our present author. Hades in Homer is a god and not a place, and there is nothing very dreadful about his requirements. Punishments are in this world, and the only "sin" was the violation of any of the multitudinous rights of the gods; failure in sacrifice and the like, or transgression against any of the norms of life which had received the sanction of the superior powers."

Such in brief was Homeric society as revealed in the two greatest epics of the world, but, unfortunately, everything clusters about a few great names belonging to the upper class and leaves us almost wholly ignorant of the true nature of society itself.

LESTER F. WARD.

Die Irtysch-Ostjaken und ihre Volkspoesie. I. Teil: Ethnographisch-statistische Uebersicht. S. PATKANOV. St Petersburg: 1897. viii + 167 pp., roy. 8°.

The Ostiaks constitute the eastern group of the extensive Finnish stock. Their language is assigned to the Ugrian branch of the Ugro-Finnic family of languages, to which also Vogul and Hungarian belong. They are scattered through the governments of Tobolsk and Tomsk, along the banks of the Ob and Yenisei in Russian Siberia. M. Patkanov's account is based largely on personal observations made during a sojourn of two years (1887-88) in that region. He distinguishes three tribes or groups among the Ostiaks: the northern, which occupies the Berezov district in the government of Tobolsk, and which has been much influenced in manners and language by the Samoyeds; the eastern, in the government of Tomsk, which has best preserved its language and tribal peculiarities; and the southwestern group, surnamed the

Irtysch-Ostiaks. The last are settled in the northern districts of the government of Tobolsk, on the banks of the Ob, Irtysch, Konda, and Demyanka. They are more advanced in culture than their northern and eastern brethren, and one might look forward to their speedy assimilation with the Russians, but for the melancholy fact that ere long only few will be left, for they are dying out rapidly. The Ostiaks are usually of middle height and compactly built. Measurements conducted by M. S. Tchugunov on 93 Surgut Ostiaks yielded a medium height of 1,596 mm. For the Irtysch-Ostiaks M. Patkanov would claim a larger stature, owing to their more favorable economic conditions, later marriages, and intermarriage with the taller Russians. Measurements of the cranium show about 77 percent dolicho- and subdolichiocephales, 14 percent mesocephales, and 9 percent subbrachy- and brachycephales. The round flat face, flat nose, prominent cheek-bones, and yellowish or rather yellow-grayish color of the skin connect the Ostiaks with the Mongols. In the construction of their houses, in dress, and in other matters the Ostiaks differ little from the Russian peasants in that rigorous clime. They usually live in settlements (*yurtes*) of from four to twenty houses. The principal occupations of the Ostiaks are fishing, hunting, and gathering of Barbadoes nuts and cranberries which grow in that region in great abundance. But few have taken to agriculture or trade, lacking, as they do, the endurance and enterprising spirit of the Russians, or even of the Tatars. M. Patkanov treats in two chapters of the economic conditions of the Ostiaks, their communal life and administration, and of the relation of the Russian government to them. He also discusses at some length and with much feeling the rapid decline of this gentle and good-natured people and its causes. These are about the same as with all weak and inferior races who come in contact with a different culture: the introduction of new and destructive maladies; demoralization by spirituous liquors; the gradual forcing, by their stronger and shrewder Russian neighbors, from territories favorable to fishing and hunting, which makes it difficult, if not impossible, for them to support a normal family and which results in decimating famines. To this should be added their natural indolence, shiftlessness, and improvidence, which favor and enhance the consequences of the preceding causes.

Three chapters, the larger portion of the monograph, are devoted by the author to recording the remnants of the culture of the Ostiaks and their religious conceptions and practices. Like other tribes of north-western Asia, the Ostiaks have no alphabet of their own, and few of them have mastered Russian writing. They used to communicate their ideas by conventional signs and crude representations of the objects.

Their counting seems to be based on the septenary system; in fact, seven and its multiples is with them (as with the Semites) a sacred number and is also used as a round or indefinite number. The heaven has seven openings; the earth, not "four quarters," but seven parts; the water seven sources; seventy-seven hymns are sung in honor of the bear, etc. They have a lunar month of twenty-eight days, and consequently thirteen months in the year. The Ostiak women are very skilful in all kinds of embroidery and in the making of ornaments of glass pearls. But their sense of color is very limited. Their medical knowledge and practice are likewise very primitive.

The Ostiaks were brought under the wing of the orthodox church nearly two centuries ago. But their Christianity can hardly be said to be even skin-deep; it merely consists in the performance of some of the rites of the Greek church, and their present religious creed and practice are a grotesque mixture of Christianity and shamanism, with the latter in the ascendancy. The Ostiak has more confidence in the incantations and sorceries of the shaman than in the prayers and sacraments of the Russian priest (*pope*). He keeps the Christian God and the saints in the background merely to play them off as rivals against his shaman divinities to make the latter better amenable to his will. It is therefore not necessary to go back to pre-Christian times in order to learn something of Ostiak mythology. The supreme divinity in the Ostiak pantheon was and is still Turim, "god," the sovereign of the universe. He is the personification of the source of all good and has his seat in the starry sky, wherefore he is also identified (like Zeus, Dyaus) with the heaven. But he is so exalted as to be practically transcendental and not to be importuned with petitions and prayers excepting in cases of emergency. The management of mundane affairs is in the hands of a host of inferior deities, good and bad: the *kuls*, water-spirits, who are persistently hostile to man; the *menks*, forest spirits, who, though habitually ill-disposed toward man, can be brought to terms of friendship by sacrifices and offerings; and the *tonxes*, friendly mountain spirits. The mediator between the supreme god and these satellites is Peiraxta, Turim's "son and right hand," whom the Ostiaks identify with Christ. Whenever there is trouble between the Ostiaks and the spirits, *i. e.*, when the latter are unable or unwilling to grant the just demands of the former, notwithstanding rich offerings, Peiraxta descends by means of an iron chain, which connects heaven with earth, and metes out justice on behalf of his father. The representations of the gods are very crude: a small stick, at one end of which a piece of sable skin or the tail of a squirrel is tied to represent the head, with two pieces of glass in place of the eyes, while the body, *i. e.*, the stick,

is wrapped in pieces of cloth. Several such god-dolls are found in Ostiak houses living peacefully with the ikons of the Madonna and saints. The cult consists in prayers, bowings of the head, the number of which must be seven or its multiples, and sacrifices. On special occasions the "great sacrifice," consisting of seven animals (horses, colts, oxen, sheep, and cocks), is offered. As friendly spirits are also revered, the shades of former heroes, and certain places where they are supposed to have lived, are sacred to them. The Ostiaks have also their sacred trees and animals. Among the former the lark holds about the same position as the linden tree among the old Germans; among the latter the bear, the king of the fauna of that region, ranks first. He is the favorite of Turim, sometimes even called Turim's son. Next to the bear, the swan, the hawk, and the raven, the "prophet bird" is endowed with supernatural character.

As regards the psychology of the Ostiaks and their views on the condition of the departed, it may be noted that they distinguish in the spiritual part of man the *tit*, the vital principle, and the *is*, the shade (something like the *ka* of the Egyptians). The *is* ascends after death to heaven, which is patterned after this world, only that there the forests are better stocked with wild game and the rivers more teeming with fish. There the shades lead the same life as on earth, by hunting and fishing, for which purpose the necessary implements are put into their graves. They also have all the sensations and needs of those living in this world, and sometimes descend to the earth when driven by hunger or thirst. On this account not only is food placed in the grave, but also at certain intervals banquets are spread for the visiting shades. In other respects the views of the Ostiaks on life after death are as vague and contradictory as are those of most primitive peoples.

I. M. CASANOWICZ.

Codex Nuttall. Facsimile of an Ancient Mexican Codex Belonging to Lord Zouche of Harynsworth, England, with an Introduction by ZELIA NUTTALL. Peabody Museum of American Archaeology and Ethnology, Harvard University, Cambridge, 1902.

When the Spanish conquerors landed in Mexico they found the natives in possession of books elaborately illustrated with colored pictures and conventional symbols, indicating a system of aboriginal paleography as complex as it was unintelligible to Europeans. To the minds of the conquerors, fired with zeal for a propaganda of the Christian faith, these books, containing as they do many idolatrous pictures, stood in much the same category as idols, and every effort was made to

destroy them. They were publicly burnt in the squares of the pueblos, in which bonfires, kindled by prejudice, perished many records of priceless value. If we can trust the statements of Torquemada, five Mexican cities brought thousands of these valuable documents to the governor, who destroyed every leaf of them.

In this wholesale destruction of a nation's literature and art a few manuscripts escaped the flames, and were carried to Europe where they remained hidden from science until an awakening interest in Americana rescued them from obscurity and brought them to the attention of scholars. The few books which survived have been published by learned societies or by generous individuals, and are now available for study. But many of these publications are in limited editions or costly form beyond the means of most students. Up to the year 1892 no absolute facsimile was attempted. Since that time, however, quite a number have been republished in exact facsimile and have been more widely distributed.

The existing number of originals of these Mexican manuscripts is small, including four called Mayan and nine or more called Nahuatl. To increase this number is an addition to our knowledge of greatest importance. Mrs Nuttall, whose brilliant researches in Mexican antiquities are widely known, has in the last year made an addition to the existing Nahuatl codices, and has brought to the attention of scholars one of the most important and best preserved of all these specimens of aboriginal art. It is a fitting recognition of merit that this manuscript should bear her name.

The history of the rescue of all the Mexican codices is in itself interesting, but that of none more so than the codex of which Mrs Nuttall tells in a charming way in the opening pages of a brochure which accompanies the facsimile of the long-lost manuscript.

The existence of the document was first called to her attention by Professor Villari, who had seen it thirty years before in the hands of a friar of San Marco, Florence. This friar had "brought it to a salon, frequented by Florentine litterati and scholars, in order to obtain an opinion about it." Subsequently Professor Villari had frequently seen it in the Library of San Marco, and had begged the custodian to preserve it with care and guard it as a precious document. But in the course of time, when monastic orders were suppressed in Italy, the manuscript disappeared from its customary place. But Professor Villari furnished Mrs Nuttall with "an all important clue," by the aid of which she learned that the lost manuscript had been presented to the Honorable Robert Curzon, fourteenth Baron Zouche, and that at his death it had passed into the possession of his son, the fifteenth baron of the

same name, in whose library it then was, having been lost to view for a third of a century. Through the kind mediatorship of the Director of the British Museum, Sir Edward Maunde Thompson, K.C.B., the codex was loaned by the owner to Mrs Nuttall for her inspection in the summer of 1898. Recognizing its great value, she had the opportunity of sharing her enthusiasm for it with Mr Charles P. Bowditch, of Boston, to whom she showed the codex in the Bodleian Library.

With characteristic generosity Mr Bowditch offered to furnish the means for its publication in facsimile, and the result is the beautiful reproduction of this lost and almost forgotten document.

In an "Introduction," a fine specimen of typography from the University Press, Mrs Nuttall describes the codex, gives the history of how it was brought to light, its relation to the Vienna and other codices, its "language," and general directions for reading it. In the same brochure there is also an all too brief discussion of the year and day signs, and a review of its contents. The pages of this introduction which will attract most attention and possibly call forth critical discussion are those which treat of the histories of certain so-called heroes or personages, as Eight-Deer, Lord Eight Ehecatl, and Lady Three-Flint. As we follow the history of the first mentioned, as interpreted by Mrs Nuttall, we discover, as she has pointed out, that the "codex does not contain what might be termed a consecutive written text, but merely consists of pictorial representations of events, accompanied by such hieroglyphic names which were necessary in order to preserve them exactly and fix them in the memories of the native bard, who would constantly derive inspiration from the printed page."

Mrs Nuttall regards her codex as the handiwork of the same artist who painted that preserved in the Imperial Library at Vienna, and by a chain of documentary evidence she shows that these two were probably the two native books given to Cortés by the messengers of Montezuma, and mentioned by the former as sent from Vera Cruz to Charles V in 1519.

This codex offers abundant material for the study of Indian symbolism, for scattered through its pages are figures wearing the symbolic paraphernalia of gods, animals of mythic character; pictures of altars, temples, and implements of war and peace, and conventionalized geometric designs. It affords important material bearing on the social position, dress, and facial decoration of women in ancient Mexico. There are pictures of chieftainesses engaged in warfare or council on an equality with chiefs, and, considered in connection with documentary record of like teaching, it affords great possibilities as an aid to a study of an obscure aspect of aboriginal sociology. Mrs Nuttall has in

preparation a monograph in which she will "present a study of women in ancient Mexico, with special reference to the present codex."

As the reviewer is a tyro in the study of Mexican pictography his judgment of the value of the interpretations given in the introduction to the codex has little weight, but he feels competent to give expression to the great importance of the discovery of this codex. In searching it out and bringing it to the attention of students Mrs Nuttall has made a most important contribution to science. To those who, by their generosity, enabled the Peabody Museum to publish the codex, students of American pictography owe a great debt of gratitude.

J. WALTER FEWES.

Horn and Bone Implements of the New York Indians. By WILLIAM M. BEAUCHAMP. (Bulletin of the New York State Museum, No. 50.) Albany: University of the State of New York, 1902. 100 pp., ill., 8°.

This is a valuable contribution to the archeology of New York and of general interest to all students of American archeology. The specimens illustrated cover a wide field, and will furnish material for comparison with similar objects found elsewhere.

The figures on the forty-three plates, three hundred and sixty-one in all, are unfortunately badly printed; they are consequently flat and give little assistance to the general reader who aims at an understanding of the objects illustrated; and although the outlines are fairly well drawn, there is much room for improvement, and more careful reference to the size of the objects illustrated would have added to the value of the bulletin.

In the text, consisting of one hundred pages, the descriptions of the figures are good, and the comments as to their uses are always interesting, owing to the author's thorough familiarity with the subject. To follow, however, the text references to figures with the plates is difficult, owing to the fact that the figures referred to on a single page are often scattered through several plates. This is especially the case with "Awis and Knives." It would have been better, if possible, to have kept figures of similar types together, as has been done with those of the fish-hooks and combs.

An excellent feature of the bulletin is the "explanation of plates," in which, on the same line, is given the number of the object, its intended use, and the text page on which reference is made to it, so that any given specimen may be taken on a plate, and by its page reference the author's views are readily learned.

To say that "it has been strangely overlooked that thorns are natural awls and needles, and that hardwood knots preceded the stone-headed war-clubs, that pointed sticks were the first fish-spears, and that arrows made entirely of wood were and still are used by some Indians of this land" suggests an oversight on the author's part, for what he says has been "strangely overlooked" is rather, one should say, an accepted theory, and has been referred to by many writers, both here and abroad. Although the Eskimo arrow-flaker "preceded the stone which formed it into shape," it should always be remembered that a flaking tool of stone, acting by free-hand percussion, probably long preceded the bone flaker, which is usually an implement of two or more parts, as, for example, its point and handle, as against the plain spheroidal stone hammer of a more primitive period, although it cannot be denied that the so-called "baton of command" of the earliest French caves, whatever its real purpose, would have made a most excellent chipper, being almost always made of deer horn.

In his preface to the bulletin Mr Beauchamp refers to the interpretation of symbols on wampum belts and apparently adds another, to use his own expression, to "the doubtful opinions which have been founded on them." To say that one has satisfactorily read a belt would give the impression that the ideograph on the belt was constant, whereas a belt used on one occasion for a given purpose would the following day possibly be employed in an entirely different manner and for another purpose. The speech conveyed by a belt was learned, there is little doubt, after the belt was made, but a different speech or purpose, such for example as that it should answer as a gauge, or for a debt, would on another occasion be employed with the same belt.

Mr Beauchamp correctly attributes most of these bone and horn implements to a period not more than two or three hundred years ago, and explains the absence of bones to the gnawing of small animals, though many of the forms illustrated are much like objects found in the oldest layers of European caves associated with extinct fauna.

JOSEPH D. MCGUIRE.

The Hieroglyphic Stairway. Ruins of Copan. Report on Explorations by the Museum. By GEORGE BYRON GORDON. (Memoirs of the Peabody Museum of American Archaeology and Ethnology, Harvard University, Vol. 1, No. 6.) Cambridge: Published by the Museum, 1902. 38 pp., 18 pl., 4".

One of the great pyramidal structures of the ruins of Copan, Honduras, is adorned with a so-called "hieroglyphic stairway," evidently

erected by the ancient Maya rulers to facilitate the ascent of that monumental pile. Since Palacio gave the earliest account of these ruins in 1570, scientific interest has always centered upon this locality. The gradual disintegration of the sustaining structure has recently caused the upper part of this impressive stairway to slide down over the lower portion, thus causing the sequence of the greater part of the inscription to become lost. Mr George Byron Gordon, already well known by his archeologic work in the same region, has been entrusted by the Peabody Museum to reestablish the continuity of the inscriptions by a thorough study of their glyphs or symbols. Molds of all the glyphs have been made during previous expeditions and space has been provided in the Museum to install the casts as soon as their sequence has been definitively traced. Mr Gordon has already substantiated the evidence that the stairway inscription is over seven hundred years older than any other inscription of Copan, the initial date of which has hitherto been determined.

Another important fact established by the removal of the debris is that the central portion of the stairway was once embellished by the colossal figure of a seated, open-mouthed monster, flanked by human figures. At the base of the steps, just below the monster, is what Mr Gordon terms the altar, a high structure with rounded sides and built into the stairway, forming several partitions. The glyphs forming the faces of the steps are of excellent workmanship. When excavations were first begun in 1891 all these stone structures were covered entirely with a dense forest, and the unexplored part of the ruins is still in that condition.

An excellent idea of the extent and character of the ruins is given by the eighteen splendid photographic plates contained in the memoir. If the date of the monument can eventually be fixed, it will be determined by means of the glyphs still in position or scattered around the stairway, though these are now in a less satisfactory condition than any of the long inscriptions of Quirigua, Palenque, and Piedras Negras. There is reason to hope that the mystery surrounding this vast ruin in the valley of Copan will soon be revealed by the excellent work that is now being conducted.

A. S. GATSCHET.

Indian Basketry. With 360 Illustrations. Second Edition. Revised and Enlarged. By GEORGE WHARTON JAMES, Pasadena, Cal.: Printed Privately for the Author, 1902. 274 pp., ills., 8°.

The immediate call for a second edition of Mr James' book shows the widespread and increasing interest in aboriginal basketry. It seems

strange that a few years ago there should have been so little appreciation of these treasured art products of Indian women. The first scientific work on Indian baskets was published by Prof O. T. Mason in the Report of the U. S. National Museum for 1884, and to him the book of Mr James is dedicated. To Professor Mason all students of the subject are indebted.

The field covered by Mr James' book is southwestern United States and the Pacific coast, an area including the important basket-making tribes of North America.

The chapters are as follows: i, Introduction; ii, Basketry the mother of pottery; iii, Basketry in Indian legend; iv, Basketry in Indian ceremonial; v, Basket-making people; vi, Materials used in Indian basketry; vii, Colors in Indian basketry; viii, Weaves or stitches of Indian baskets; ix, Basket frames and designs—their origin and relation to art; x, Some uses of Indian baskets; xi, Various Indian baskets; xii, Symbolism of Indian baskets: *a*, Symbolism in basket forms; *b*, Development of symbolism in basket designs; *c*, Imitation and conventionalization; *d*, The birth and development of geometrical designs; *e*, Diverse meanings of designs; *f*, Designs of animal origin; *g*, Designs of vegetable origin; *h*, Designs of natural origin; *i*, Designs of artifact origin; *j*, Baskets with mixed designs; xiii, The poetry of Indian basketry; xiv, Baskets to be prized; xv, The decadence of the art; xvi, How the art may be preserved; xvii, Hints to the collector; xviii, Bibliography of Indian basketry; Appendix; Index.

The book will be of great service to collectors. Too much cannot be said in praise of the wealth of illustration. The popular form of the work has not been conducive in all cases to scientific arrangement of the matter. Much has been quoted from writings of Mason, Holmes, Cushing, Matthews, Farrand, Dixon, Teit, and others, and Mr James has incorporated his own observations among the Indians, extending over a period of twenty years, which are of value to science. There is a copious index.

WALTER HOUGH.

Kwakiutl Texts. By FRANZ BOAS and GEORGE HUNT. (Memoirs of the American Museum of Natural History, Vol. V; Anthropology, Vol. IV, 1. Jesup North Pacific Expedition.) New York: January, 1902. 270 pp., 4².

This large body of texts in the Kwakiutl language, which is spoken on parts of Vancouver island but chiefly on the adjacent mainland, was recorded between 1895 and 1900 by Mr George Hunt, of Fort Rupert, B. C., by means of the system of recording unwritten languages pro-

posed by Dr Boas. Mr Hunt speaks Kwakiutl as his mother tongue, and is intimately acquainted with the customs and traditions of the people. Dr Boas had ample opportunity of discussing with Mr Hunt, during repeated visits to British Columbia, the material that had been collected, and he later critically revised the texts with the assistance of William Brochie, a half-blood Nimkish (one of the Kwakiutl tribes), of Alert bay, who had translated the Gospels for Rev. Alfred J. Hall.

The system of sounds adopted in the volume probably represents all of those known to this northwestern language. The number of vowels, counting the long vowels separately, is seventeen; while there are thirty-two consonants, including the "fortes" or explosive surds. The syllables of Kwakiutl words generally terminate in vowels when they occur within the word, but final syllables end just as often in consonants. As the natives differ considerably among themselves in pronouncing the terminal letters, the phonology of Kwakiutl is by no means a settled one. The emphasis is generally audible at the beginning of the longer words, and seldom increases toward the end. The syntax of the texts is exceedingly simple.

Mr Hunt's texts comprise not fewer than 270 pages of this splendid volume. The words are carefully accented throughout. The pages are arranged in parallel columns of English and Indian, and the various stories, traditions, tales, and myths are arranged by tribes or by the localities whence they were obtained; thus the first section is headed: "Traditions of the Dzawade-Enox"; the fourth, "Traditions of the Némgêa." The large majority treat of land and sea animals.

The work appears in the usual highly attractive style of the American Museum *Memoirs*, the only fault being its unwieldy size.

A. S. GATSCHET.

The Living Races of Mankind. A Popular Illustrated Account of the Customs, Habits, Pursuits, Feasts, and Ceremonies of the Races of Mankind throughout the World. By H. N. HUTCHINSON, J. W. GREGORY, and R. LYDEKKER, Assisted by Eminent Specialists. With 648 illustrations. New York: D. Appleton and Co., 1902. 584 pp., 8°. (\$5.00.)

This handsome book is just what its name imports, a popular account of the peoples of the earth illustrated by hundreds of photographs. The motive for its production is a new one in ethnology, namely, that the most profitable markets for British wares may, in the fierce competitions of the day, be found in places which are now the darkest corners of the earth. "The half-clothed savage, just emerging from the brute condition, is a human being capable of education, in the

near future, into a customer for British trade and a contributor to the world's wealth." There is more of this ingenuous talk. The reader on the Western Hemisphere will smile when he finds the mighty inroads on English commerce alluded to as "pin-pricks inflicted on the long limbs of Greater Britain by Continental rivals." Two characteristics of this sumptuous volume are most noteworthy: (1) the nearly seven hundred pictures are photogravures, far more trustworthy in ethnology than any drawing can be; and (2) since the authors regard these many peoples in all continents as coming patrons of British trade, they treat them fairly, not grotesquely, and present always fine types of each. In a treatise devoted to the disparagement of mankind it is easy to see how, on the other hand, the scene would utterly change, and the races would not know themselves.

The authors start out from the Malayo-Polynesian area, travel westward through Asia to Africa and Europe, and end with the Western Hemisphere. It would be easy to criticize the scientific statements of the work, but science is disclaimed, and you have only to take their word and enjoy one of the handsomest picture galleries of humanity, whose authors are in love with their kind.

O. T. MASON.

Food: Its Search, Capture, and Preparation. BY WALTER E. ROTH. (North Queensland Ethnography Bulletin No. 3.) Brisbane: 1901. 4^o.

This publication is a Queensland government document presented to the Houses of Parliament. Mr Roth has an office similar to that of our Indian Commissioner, having the title "Northern Protector of Aborigines, Queensland." In giving an account of food among the native Australians, he has followed somewhat the *Notes and Queries* of the Anthropological Institute in London. The captions of his chapters are: Meals, Middens, Food in season, Preparations for cooking vegetables, Preparations for cooking meats, Cooking, Water, Minerals, Plants, Ants, Bees, Other insects, Grubs and caterpillars, Crustaceans, Mollusks, Fish, with the various methods of capture—such as transfixing, puddling the water, poisoning, bobbing, fish-hooks, hollow logs, baskets and cages, fish nets, stone dams and weirs, bush fences, movable fences, harpoons, and spears.

Paragraphs are devoted to different animals with a description of the method of capture, closing with sections on cannibalism and narcotics. Nearly every one of these paragraphs is a little monograph on one of the humble industrial processes of the Australians, and forms a part of the chapter on human activities for each special topic.

O. T. MASON.

Head-hunters: Black, White, and Brown. By ALFRED C. HADDON.
London: Methuen & Co., 1901. 426 pp., 32 pls., 40 figs., 6 maps, 8°.

The preface of Dr Haddon's book is a charming recital of the way in which anthropologists are made. In this case a young Cambridge student went to Torres straits to explore coral reefs, and wound up by organizing an expedition for the thorough study of the peoples. The present volume is far greater than its title, for it is by no means a mere recital of blood-curdling decapitations. The variously colored head-hunters are Papuans, Indonesians, and Malays, and we have here accounts of journeyings among them by Dr Haddon, accompanied by Dr W. H. R. Rivers, physiological and experimental psychologist; Dr C. S. Myers, student of audition and of the music of the natives; Mr W. McDougall, assistant in experimental psychology; Mr Sidney H. Ray, a recognized authority on Melanesian and Papuan languages; Mr Anthony Wilkin, photographer and student of architecture, of land tenure and transfer, and of sociology; and Mr C. G. Seligmann, who would give attention to native medicines and diseases, and economic plants and animals. From each of these and as the result of his labors will come a volume of special interest. Meanwhile Dr Haddon's head-hunters, with their upper stories yet upon their shoulders, will live for us and lead us all about the little islands lying between Queensland and New Guinea, through British Papua and Sarawak, or northwestern Borneo. We shall measure their bodies and their minds; write down their speech and lore; examine their industries on the land, on the water, and in the water; enjoy with them their amusements and simple esthetic productions; see for ourselves the working out of social problems in birth, marriage, family life, secret organizations, government, head-hunting, war, peace, and the last act; finally, their way of solving the problems of life, of the universe, and of the world to come. There is not a tiresome or superfluous page in the *Head-hunters*, and the publishers have also our praise for a handsome and honest book.

O. T. MASON.

Das Anonyme Wörterbuch, Tupi-Deutsch und Deutsch-Tupi, von JULIUS PLATZMANN. *Mit einer Karte des Amazonenstroms.* Leipzig: B. G. Teubner, 1901. xxxii, 642 pp., map, 8°.

This is a new edition or remodeling by Dr Julius Platzmann of an old Tupi-Portuguese lexicon published in 1795 at Lisbon, Portugal. This lexicon, now exceedingly rare, purports to be the first part of a "Portuguese-Brazilian Dictionary," and consists of seventy-nine pages in double columns. The second part, as promised in the *prologo* of the first, has never appeared, or if it did, no trace of it is left. Platzmann

has translated the Portuguese definition of each vocable into German, and has added to many of the terms the necessary explanations from geography, natural history, popular superstitions, and whatsoever else he thought needful to make the signification clear. Many words had to be translated or transcribed, from the meaning suggested by their etymology, into the terms corresponding to them in the literary German, as for instance: *maracaymbá*, "eine Hexe"; real meaning, "eine gewaltige Meisterin der Zauberinstrumente" (p. 128). From this first part Dr Platzmann has reconstructed the second by placing the German word first and interpreting it with the corresponding Latin vocable; for example: "Franzose, ein Gallus, *Taphy tinga*," "Bestandtheile, Eine weisse, *tinga*," "Feindliche, Nation, *Taphy*." Light is cast on several obscure words by the addition of Guarani terms corresponding to them, and although Guarani is a dialect of Tupi spoken thousands of miles from the Tupinambá (which is the name of the Tupi dialect treated in the anonymous dictionary), they explain one another wonderfully well. The Tupinambá are a Tupi tribe known from the earliest South American exploration. Their home is south of Pará and east of the lower Tocantins river. The fact that their habitat lay near the mouth of the great Amazon was the reason that the Tupinambá dialect was adopted by the majority of Brazilian tribes as a means of common intercourse, and later on it also became a medium for literary composition, for instruction, and for promoting Christianity.

A. S. GATSCHET.

PERIODICAL LITERATURE

CONDUCTED BY DR ALEXANDER F. CHAMBERLAIN

GENERAL

Anthony (R.) Modifications musculaires consécutives à des variations osseuses d'origine congénitale ou traumatiques chez un renard. (Bull. et Mém. Soc. d'Anth. de Paris, 1901, v^e 3, 11, 490-505.) Treats, with 4 figures, of defective development of the distal extremity of the fifth digit (right forefoot) and shortening of the free portion of the calcaneum (left forefoot) in a fox, and their relation to the morphogeny of the muscles in general. The author thinks that a muscle may increase its power by augmenting the quality of its contractile substance without varying its volume. The multiplication of the constitutive fibers of the muscle and not the increase of each in volume may explain the augmentation of muscular volume in athletes, etc. The modifications of volume due to certain pathological conditions are also briefly considered. In the discussion following, F. Regnault pointed out that a weight-lifter, a disk-thrower, etc., have larger muscles than a laborer—they can perform a larger amount of work in a unit of time, but are incapable of accomplishing the same number of kilogrammeters in a day; dock-laborers, navvies, etc., whose muscles are not so thick, accomplish an enormous number of kilogrammeters in a day, but cannot make suddenly a considerable effort; the best laborers for works of fatigue are poor wrestlers and easily thrown; the leg of the bicyclist is not so developed as that of the professional *danceur*. The effect of modern "gymnastic" systems upon the muscles and the health of the human subject generally (the authors do not consider this kind of exercise favorably) is to be discussed in a forthcoming book by M. Regnault and M. Pagès.

Azoulay (Dr) Le musée phonographique de la Société d'Anthropologie. (Ibid., 327-330.) Brief account of re-

cent work for the Phonographic Museum. There are now 331 phonograms collected for and maintained by the Museum, besides a set of 55 others (16 relate to Chinese dialects; the rest to Chinese music) given by Sir Robert Hart and his agent at Paris. In Europe 23 languages and dialects are represented, in Asia 20, in Africa 33, in America 2, in Oceania 1. See also 436-439.

Bateson (W.) Heredity, differentiation, and other conceptions of biology, etc. (Proc. R. Soc., Lond., 1901, LXIX, 193-205.) A criticism of Professor K. Pearson's recent discussion of homotypy. Mr Bateson holds that "the resemblance we call heredity may be a special case of the phenomenon of symmetry." Much of Professor Pearson's work relates to *normality* rather than to *evolution*.

Beeton (Mary) and Pearson (K.) On the inheritance of the duration of life, and on the intensity of natural selection in man. (Biometrika, London, 1901, 1, 50-89.) This statistical discussion, with 8 curves and 25 tables, leads to the following among other conclusions: That the elder members of a family live sensibly longer than the young. That the expectation of life is seriously modified by either the ages of death of their relatives or their present ages. The expectation of widowhood must be based not only on the present age of the husband, or on the age of relatives, but on the age at death of children. Inheritance is stronger in members of the same sex. The daughter seems to be more closely related in duration of life to her parents than the son. Women are sensibly more variable in their age at death than men. With a given environment individuals having certain constitutions are fitter to survive than others. Natural selection is manifestly at work in man, and is a factor in 50 to 80 per cent. of deaths.

Bellucci (G.) Collezione paleontologica ed etnologica Bellucci in Perugia. (Arch. p. l'Antrop., Firenze, 1901, XXXI, 299-312.) Account of origin, development, and present condition of the Bellucci palethnological and ethnological collection at Perugia. The collection consists of a geological-paleontological, a palethnological, and a palethnographical-ethnographical section, and contains altogether some 30,000 specimens. The first section consists of specimens of rocks and fossils found in deposits where evidences of human industry were discovered. The second (the richest) consists chiefly of specimens from the various prehistoric periods, from various parts of Italia (Umbria especially). The third section comprises besides the well-known collections of ancient and modern Italian amulets (and many others from all over the world) a collection of ancient and modern Italian *ex-voti* and *donaria*. A "bibliographic note" on pages 311-312 gives the titles of 32 publications by the author relating to his collection and to the ethnology of Umbria.

Boas (F.) The relations between the variability of organisms and that of their constituent elements. (Science, N. Y., 1902, N. S., XV, 1-5.) General discussion. The author concludes that "the problem of variability may be treated by a study of the variability and of the correlations of the constituent elements of organisms. The study of physiological and pathological variations that elucidate correlations will, therefore, be a most powerful factor in the discussion of the problem of variability." This view is not far from that of Virchow, who looks for the clue for the problems of variability in the study of cellular variation.

Cabibbe (G.) Il processo postglenoideo nei crani di normali, alienati, criminali in rapporto a quello dei vari ordini di mammiferi. (Anat. Anz. Jena, 1901, XX, 81-95.) Comparative study, with 8 text-figures, of the post-glenoid process in man and other mammals. It is evidently, the author thinks, an anomaly of degenerative significance,—more common in criminals and the mentally and physically abnormal; also more common in men than in women, and in adults than in the young.

Daffner (F.) Anthropologische Beiträge zur Kenntnis der Gesichtsbildung.

(Arch. f. Andur., Brunschwg., 1901, XXVII, 337-364.) Treats with considerable detail (and résumés of various investigations) of the development and growth of the face in general and of its various elements in particular,—frontal bone, malar bones, upper and lower jawbones, nasal bones, ear, etc.,—from birth onwards. Daffner agrees with Holl in thinking that the beauty and ugliness of the human face are conditioned in the first place by its bony parts. The soft parts may give a temporary beauty to an ugly countenance, which years or diseases soon destroy. The bony structure, on the other hand, may cause the face to retain its beauty, even in old age.

Dwight (T.) Os intercuneiforme tarsi. Os paracuneiforme tarsi, Calcaneus secundaries. (Anat. Anz., Jena, 1902, XX, 465-472.) Treats, with 3 text-figures, of certain peculiarities of the bony structure of the foot. The intercuneiform and paracuneiform bones are thought to be new, also the other peculiarity noted.

Fischer (E.) Zur Kenntnis des Primordialcraniums der Affen. (Ibid., 470-477.) Gives results of study of an embryonal skull of a *Cercopithecus cynomolgus*, with comparison of human embryonal skull. Dr. Fisher agrees with Schwalbe in holding that the prototype of ape and man had a broad interorbital septum.

Galton (F.) The possible improvement of the human breed under existing conditions of law and sentiment. (Pop. Sci. Mo., N. Y., 1902, LX, 218-233.) Among the topics briefly discussed are: Human variety, distribution of qualities in a nation, comparison of the normal classes with those of Mr. Booth, worth of children, descent of qualities in a population (the standard scheme of descent is given on page 224), economy of effort, marriage of like to like, diplomas, correlation between promise in youth and subsequent performance (this has never been properly investigated), augmentation of favored stock, profit and loss, existing activities, prospects. The author holds, among other things, that "the brains of the nation lie in the higher of our classes. If such people as would be classed w or x could be distinguished as children and procurable by money in order to be reared as Englishmen, it would be a cheap bar-

Galton.—Continued.

gain for the nation to buy them at the rate of many hundred or some thousands of pounds per head."—Farr's estimate of the value of an Essex laborer's baby was £5; Galton estimates the value of his X-class baby as thousands of pounds. Again: "The great gain that England received through the immigration of the Huguenots would be insignificant to what she would derive from an annual addition of a few hundred children of the classes W and X." But such arguments are not as valid as they seem. The segregation of habitual criminals and the denial to them of opportunities for reproduction are favored by Galton. Marriage-diplomas, and social pressure to make the best marry the best, the increase of voluntary and public activities to such end, etc., are also advocated. See also *Nature*, London, 1901, LXIV, 659-665.

Gaudry (A.) Sur la similitude des dents de l'homme et de quelques animaux. (*Anthropologie*, Paris, 1901, XII, 513-525.) Continued from XII, 93-102. Discusses, with 18 text-figures, the dental peculiarities of several species of anthropoids in relation to those of the lower and higher races of man. The author believes that "in their dentition the anthropomorphic apes differ less from the quadrupeds of the dawn of the tertiary era than they do from other animals of the present time." Moreover, we "must admit that we do not yet know whence have come the animals nearest to man."

Giglioli (E. H.) Materiali per lo studio della "Età della pietra" dai tempi preistorici all'epoca attuale (origine e sviluppo della mia collezione). (*Arch. p. l'Antrop.*, Firenze, 1901, XXXI, 19-264.) In this elaborate descriptive article, with 57 text-figures of specimens, Dr Giglioli gives an account (according to geographical divisions) of his valuable collection illustrating the Stone age from prehistoric times down to the present day. The nucleus of the Giglioli collections was some weapons, etc., from the Kweiying of Formosa, given the author while a student under Huxley in London in 1863, but the special collection now under consideration was begun in 1883. Europe is represented chiefly by prehistoric implements and by a series of modern stone implements still in use. Asia is

fairly well represented considering the general scarcity of Asiatic lithic implements in museums. From Africa there are nearly 1,000 specimens. The chief part of the article is devoted to Australasia (Australia, Tasmania, Micronesia, Melanesia, Papuasia, Polynesia) and America, the former taking up pages 41-143 and the latter pages 143-261. The part of the collection relating to America is particularly rich and important.

Guyot (Y.) Des caractères de l'évolution et de la régression des sociétés. (*Bull. et Mém. Soc. d'Anthr.* de Paris, 1901, V^e s., II, 341-355.) General discussion of the progressive and regressive characters of human societies. Among the topics treated are: Definition of evolution, primitive peoples, the physical *milieu*, the social *milieu*, subjective tyrannies, survivals, miscegenism. According to the author: When man is content to adapt himself to his environment, he stagnates; when he adapts his environment to his needs he is perfectible. The less he is a slave of his environment and the more he is able to transform it, the more advanced is man in evolution. The history of human progress is the study of the transformations of the physical and the social environments. The degree of civilization may be measured by the independence enjoyed by woman and the respect which she inspires. Evolution means the predominance of objective over subjective conceptions. Ancient culture was stratified, modern civilization is fluid. Altogether, evolution is in proportion to man's ability to transform his intellectual, moral, and social *milieu* as well as his physical.

Helm (O.) Chemische Untersuchung von Bernstein-Perlen aus alten Tempel-Ruinen Babyloniens und aus Gräbern Italiens, sowie Verfahren zur Bestimmung der Bernsteinsäure im Bernstein. (*Verh. d. Berl. Ges. f. Anthr.*, 1901, 400-405.) Gives the results of the chemical examination of two amber beads from Nippur, one also from Poggio alla Guardia (Vetulonia) in Etruria and another from the necropolis of Novilara near Pesaro (Pisaurum) in Umbria, together with the nature of the process employed. The results of the examination of ten other beads and articles of amber from various parts of Italy, received some time previously,

Helm—Continued.

are also given. The Babylonian beads seem to be of succinite or real amber, likewise also those from Italy.

Herman (O.) Die Fängigkeit der Fische und Fischreusen. (Mitth. d. anthrop. Ges. in Wien, 1901, XXXI, 38-51.) Discusses, with 25 text-figures, the form and construction of fish-traps, fish-weirs, etc., with respect to their catching power and the way the fish come in to be kept prisoners. The most primitive fish-weir, the author thinks, is the *résefine* of the Magyars (used also by the Roumanians). Catching fish by means of weirs or wickerwork apparatus belongs to the earliest period,—more primitive are the methods of catching fish by means of the human body and its members ("driving fish," e. g., as practised by the women even now in parts of Hungary). Another interesting fish-trap is the Russian *ushofka*. The Chinese fish-traps have some peculiarities of their own, while the Japanese *jori* is very complicated as compared with some of the others.

Holl (M.) Mozart's Ohr. Eine anatomische Studie. (Ibid., 1-12.) In this article, with 3 text-figures, the author discusses the ear of Mozart, which, from the water-painting in the Mozart Museum at Salzburg, has been recognized as "unusual." The conclusion reached is that "there is here no question of a malformation or of a lower development of the ear, but of a varietal formation, an individual variation of the concha, which special peculiarity of form, instead of being termed 'deficient concha,' might be called 'the Mozart ear.'" This peculiarity seems to have been present in the left ear only of both father and son.

Hrdlička (A.) New instances of complete division of the malar bone, with notes on incomplete division. (Amer. Nat., Boston, 1902, XXXVI, 273-204.) After historical introduction the author gives details of seven cases (one in an adult white woman, one in an adult ancient Peruvian man) of complete malar division. On pages 290-291 are tables giving the frequency of partial malar division in skulls of various races (chiefly Amerindian) examined by Dr Hrdlička. It would appear that partial malar division is much more common with Indians than with whites in

America, and with them somewhat more common in men, and most frequent of all in children. The Peruviana and the southern Utah Cliff Dwellers exhibit this peculiarity the most,—it did not occur in any of twenty Australian and Polynesian skulls examined. In mammals below man malar incisions are very rare. The paper is accompanied by 15 text-figures.

Keasbey (L. M.) The descent of man. (Pop. Sci. Mo., N. Y., 1902, LX, 365-376.) General discussion of the physical and psychical characteristics of the human prototype,—the superiority of the human being "consisted in the acquisition of qualities and the occupation of an environment which enabled him to widen the range of his food-choice." The author holds that "the prototype was differentiated from the apes in Indo-Malaysia, during the pliocene period, and arrived in remote regions of the earth before the prehistoric epoch,"—the dispersion of the human race being coincident with the Ice age. The lines of probable migration are also pointed out. Professor Keasbey thinks that "there is archeological and ethnological evidence to show that primal men migrated originally along the lines laid down by the climate and topography of the glacial periods,"—there were at least three of them.

Kjellén (R.) Om maritim anpassning. (Ymer, Stockholm, 1901, XXI, 437-426.) A general discussion of "maritime aptitudes," based upon Professor H. R. von Schwerin's *Om luste öfver olika yf-färdighet i the Land's Utio. Arnskrift* for 1900. The unequal aptitudes for the sea of various coast-peoples are pointed out, together with differences within the same race. Natural environment and racial disposition are discussed. The most anti-pelagic people of the world are said to be the Affurs of Bura and Celebes, who are forbidden on pain of death to approach the sea so near as to hear the roar of the waves. The Hovas of Madagascar are not fond of the sea like their kinsmen of the Pacific. The Krumen of western Africa have learned the art, their ancestors having been inland negroes. The Aolians differed from the Ionians of old Greece.

Kraus (A.) Museo Etnografico-psicologico-musicale Kraus in Firenze. (Arch. per l'Antrop., Firenze, 1901,

Kraus—Continued.

XXXI, 271-297.) Brief account of the Kraus Ethnographic - Psychological-Musical Museum in Florence with a catalogue of musical instruments and appliances (now more than 1000) in the collection. Asia is represented by 115, Australasia and Polynesia by 21, Africa by 32, Europe by 870, and America by 20 specimens. The Kraus collection has already been of great service to students of the history of music.

Krause (E.) Zur Frage von der Verfärbung vorgeschichtlicher Skelettknochen. (Globus, Braunsch., 1901, LXXX, 361-367.) Interesting discussion, with bibliographic references, of the coloration (red) naturally or artificially of the bones of prehistoric skeletons. The coloration in the finds at Brunn, des Hautaux, Mas-d'Azil, Agnani and Klein-Černosek appear to indicate intentional reddening, in the last two cases with cinnabar. This paper should be read in connection with Dr Hrdlička's study of red coloration in the *American Anthropologist* (1901, N. 6., III, 714-725).

Kretschmer (F.) Das Märchen von Blaubart. (Mith. d. anthrop. Ges. in Wien, 1901, XXXI, 62-70.) Discusses the French, and Sicilian versions in particular, the relations of the Bluebeard Märchen to demonology and folk-song, etc. The Styrian folk-song, "Es war einmal ein Rittersmann, with the children's song based upon the same theme, "Lieb Anna saß auf einem Stein,"—in Swabia it appears as "Bertha and the Robber,"—are referred to, and the resemblances of this widespread European ballad to the Bluebeard tale indicated. Like many of the versions of the ballad, the Perrault Bluebeard tale has originated "through the contamination of two different stories,—a myth of the demon of the lower world, and a tale of murder living in folk-song and folktale." No such particular individual as Gilles de Retz is commemorated. The author agrees with Hofmann as to the meaning of the term "Bluebeard," and notes that an East Prussian story makes it "Greenbeard."

Lacassagne (A.) La médecine d'autrefois et le médecin au 20^e siècle. (Rev. Scientif., Paris, 1901, 4^e s., XVII, 193-204.) This study of medicine and the physician past and present includes a

brief sketch of their character from ancient Egypt to the present.

Lejeune (C.) La représentation sexuelle en religion, art et pédagogie. (Bull. et Mém. Soc. d'Anthr. de Paris, 1901, 5^e s., II, 465-481.) The author discusses (with 3 text-figures) the universality of the phallic cult and its ramifications, its heirlooms to early Christianity, its symbols, etc. The pendant of the phallus, the author thinks, is the triangle (symbolic of the pubic region of the female), and in the *lingam* both are united. In India the triangle is also the symbol of the trinity. The cross, too, M. Lejeune would derive from the reverse aspect of the human figure. Passing to the consideration of sex and the nude in art, the author treats in general terms the ancient and Christian ideas on these subjects, noting that while in the East religion has gained from the contemplation of the sex-beautiful, in the Occident it has lost not a little. The remaining part of the paper discusses the question of imparting a proper knowledge of sex and generation to the young, a procedure of which M. Lejeune is heartily in favor.

Leashaft (F.) Das Handgelenk des Menschen. (Anat. Anz., Jena, 1901, XX, 320-340.) General discussion, with review of literature of the subject.

Lewy (H.) Das Vogelnest im Aberglauben. (Zuchr. d. Ver. f. Volkskunde, Berlin, 1901, XI, 462-463.) Traces the popular superstition (letting the mother-bird fly away) in connection with the finding of a bird's nest to the Biblical admonition in Deut. XXII, 6.

Lombroso (C.) La puberté chez les hommes de génie. (Rev. d. Psych. Clin. and Therap., Paris, 1901, V, 355-367.) After briefly discussing some geniuses (who seem to have had no favoring circumstances) Lombroso treats of emotion during puberty, beauty, puberty, tardy emotions, etc. His theory is that the factor determining the real efficacy and speciality of genius is "a strong emotion at the time of puberty." This orientates and establishes the individual as a genius. Beauty and love, religion, etc., may be this inspirer and shepherd of the mind.

Lugaro (E.) Una definizione obiettiva del fenomeno psichici. (Arch. p. l'Antrop., Firenze, 1901, XXXI, 501-

Lugaro—Continued.

324.) The author concludes that "the psychic processes consist of dynamic adaptations obtained by means of the systematic co-ordination of internal processes which correspond symbolically to external reality, to the needs and dangers of the organism, to the reactions of which it is capable."

von Luschan (F.) Schädel aus Guatemala, Massai-Land und Neu-Britannien. (Verh. d. Berl. Ges. f. Anthr., 1901, 285.) Dr von Luschan exhibited to the Society a deformed skull from Guatemala with an index of 123, a notably capacious (2000 ccm.) Massai skull, and a skull from New Britain with unusually large pre-nasal fossa.

Magnanini (R.) Sulla superficie del corpo umano. (Atti d. Soc. Rom. di Antr., 1901 [1902], VIII, 114-120.) In this article, with 3 tables of measurements, the author discusses the calculation of the superficies of the human body, its relation to stature, weight, age, and sex. The previous work of Meck, Fubini and Ronchi, Miwa and Stoeltzner is referred to briefly. The subjects studied were pupils of the Royal Naval Academy at Leghorn (13-20 years of age) and of the Military School at Milan (11-19 years). Dr Magnanini uses a special formula of his own and compares the results with those obtained by the Miwa-Stoeltzner process.

Mayet (L.) Ueber Hypertrophie der lumbosacralis und ihre Auffassung als ein Stigma (Merkmal) von Entartung. (Verh. d. Berl. Ges. f. Anthr., 1901, 426-430.) Discusses, with 1 text-figure and a bibliography of 50 titles, lumbo-sacral hypertrophosis as a "degenerative stigma." The special case cited by the author is that of a woman in Lyons, France, who was undoubtedly a degenerate. Hypertrophosis lumbosacralis is to be regarded as "an anatomical degenerative stigma."

de Mortillet (P.) Liste des publications de Gabriel de Mortillet. (Bull. et Mém. Soc. d'Anthr. de Paris, 1901, v* 8, II, 448-468.) Chronological bibliography 1845-1898. Contains some 400 items, books, articles, reviews, etc.

von Negelein (J.) Das Pferd im Seelenglauben und Totenkult. (Ztschr. d. Ver. f. Volkskunde, Berlin, 1901, XI, 406-420.) First part of an essay on

the horse in soul lore and the cult of the dead. Among the topics considered are: The horse as a religious sacrifice, the relation of the horse to spirit-phenomena, the horse as an omen-animal, the headless horse, the horse as messenger and carrier to the other world, the white horse and death-steed, the storm-steeds, the devil-horse. In many respects the Semitic ostrich corresponds to the Aryan horse. The article is well-provided with bibliographical references.

Netri (F.) Identificazione dei recidivi. Sistema dattiloscopico. (Atti d. Soc. Rom. di Antr., 1901 [1902], VIII, 121-123.) Résumés Dr Quesada's recent report on the identification of recidivists (Buenos Aires, 1901), advocating the finger-print method.

Notes and queries on totemism. (Folk-Lore, Lond., 1901, XII, 385-393.) A questionnaire with 29 rubrics. The introduction defines and describes totemism generally.

Nuttall (G. H. F.) The new biological test for blood in relation to zoological classification. (Proc. Roy. Soc., Lond., LXIX, 150-153.) In the experiments of the author, "the only bloods which gave a reaction similar to that of human bloods have been the bloods of different species of monkeys."—the reaction is different only in degree, monkey blood giving a feeblor reaction than human blood with the anil-serum for human blood. In the case of the New World monkeys the reaction is less marked than with the Old World monkeys; the Hapalids reacted least of all (18 species were tested). Dr Nuttall thinks it may be possible to "determine chemical differences in the blood of the various races of man," so that we will no longer need to depend solely upon morphological characters for the differentiation of species.

Nyström (A.) Ueber die Formenveränderungen des menschlichen Schädels und deren Ursachen. Ein Beitrag zur Rassenlehre. (Arch. f. Anthr., Brnschw., 1901, XXVII, 317-336.) This second part of Dr Nyström's essay, with 22 text-illustrations, treats ethnographically of the dependence of bodily position upon professions and means of transport at the various stadia of human culture, the influence of domestic animals, etc. Upright and bent-

Nyström—Continued.

over positions at work must exercise some influence upon the form of the skull,—primitive man on his knees arrow-making, the kneeling or squatting ironsmith of central Africa, the ancient Egyptian at the plow, the negress of Guinea grinding maize, the jiriki-shaman of Japan, the Berber and his family *en voyage*, the Kurdish horseman, the Assyrian king in his chariot with convoy following, the Lapp in his sled, the innumerable workmen of today at their machines, are made to furnish evidence for the author's theory of the production of dolichocephaly and brachycephaly by bodily position and exertion of the neck-muscles. Dr Nyström sees a connection between the use of means of transport (horses, sleds, etc.) and brachycephaly, citing as examples certain Mongols, the Lapps, etc., but meets difficulty when he comes to the Chinese and the Eskimo. Some of the brachycephaly of eastern Europe ancient and modern he attributes to wide-spread use of the horse, sleds, carriages, etc. Artificial deformations have, of course, counted for something.

Paul-Boncour (G.) Étude des modifications squelettiques consécutives à l'hémiplégie infantile. (Bull. et Mém. Soc. d'Anthr. de Paris, 1901, 5^e s., II, 332-395.) This second section treats of the humerus (chiefly), radius, and cubitus. The diseased humerus is slenderer, more rounded (anterior edge less prominent), with less voluminous rugosities, narrower and shallower olecranon cavity, less torsion, etc. Details of the condition of the humeri studied are given. The olecranon perforation is due to mechanical causes.

Pearson (K.) On the inheritance of the mental characters in man. (Proc. Roy. Soc., Lond., LXIX, 153-156.) As the result of very elaborate observations of physical characters in upwards of 1100 families (father, mother, son, daughter) and 1000 pairs of brothers, Professor Pearson concludes that "the mental characters in man are inherited in precisely the same manner as the physical," and "our mental and moral nature is, quite as much as our physical nature, the outcome of hereditary factors." See also Beeton (M.)

Pigorini (L.) Museo Preistorico ed Etnografico di Roma. (Arch. p. l'Antr., Firenze, 1901, XXXI, 313-317.) Brief

account of the origin and present condition of the Prehistoric Ethnographic Museum at Rome; founded by the author in 1873. Its arrangement of the ethnographic collections of the Museum precede the palethnological (those of Italy first, then other countries). The ethnographic material is arranged geographically.

Placzek (S.) Die Skelet-Entwicklung der Idioten. (Verh. d. Berl. Ges. f. Anthr., 1901, 335-345.) Treats, with 12 test-figures (from Röntgen pictures), of the skeletal development of idiots, with particular reference to the hand. The subjects number 10, of whom the majority were ca. seven years old. As the result of his careful investigations the author concludes: That in idiots with incomplete growth in height, no arrest of the bony "anlage" exists, but rather a quicker development. Idiocy proper is to be distinguished sharply from cretinism. In the discussion on this paper Professor Rudolf Virchow took occasion to say that he had never maintained that cretinism was due to premature synostosis of the cranial bones; what he had maintained was that the peculiar "cretin face" was due to a shortening of the basis of the skull, induced by premature synostosis.

Regalia (E.) Il Museo Nazionale d'Antropologia in Firenze. (Arch. p. l'Antr., Firenze, 1901, XXXI, 9-18.) The National Anthropological Museum in Florence was founded in 1869, the first in Italy. The catalogue of anatomical material now numbers 4,416 and that of the ethnological 8,014 specimens. Among the more important anatomical collections are those of Etruscan and Papuan crania; the Mazzei group of Peruvian skulls; Sommer's collection of Ostiak and Samoyed crania; and Parkinson's collection of 179 New Britain skulls. Of the ethnological the following deserve particular mention: The collection of Capt. Cook (studied by Giglioli); the Beccheri-Albertini-Podenziana collection from New Guinea; the Piaggia collection of weapons and ornaments from the upper Nile region; the Siberian collection of Sommer; the Modigliani collection from Nias; the Loria Turkoman collection; the de Langier collection from Arabia; the Mazzei Peruvian collection; the Gastaldi collection from Abyssinia; the Pozzi-Brunt Mexican collection; the del

Regalia—Continued.

Furia collection from the Gran Chaco; the Scheidel collection from Australasia, Melanesia, Polynesia; the Seton-Karr collection from the Wadi-el-Sheik, etc. The list given on page 17 of Italian and foreign scientific men who have visited the Museum or taken advantage of its collections for their investigations, shows to what good use it has been put. The "Indian Museum" has, since 1891, been under the control of the National Anthropological Museum.

- Collezione osteologica di E. Regalia in Firenze. (*Ibid.*, 265-270.) The Regalia osteological collection in Florence consists of the skeletons of terrestrial vertebrates, mammals, birds, reptiles, and amphibians, and is the best of its kind in Italy, both as to manner of preparation and number of specimens. Many distinguished naturalists have consulted it for their studies. It is the result of more than 18 years of labor and sacrifice on the part of Dr Regalia. It is a museum for the study of quaternary fauna and of great value to the palethnologist.

Regnault (F.) La femme à deux nez et le polyzoisme tératologique. (*Bull. et Mem. Soc. d'Anthr. de Paris*, 1901, v^e s., II, 333-337.) Brief account of a woman (otherwise normal, intelligent, aged 52 at death) with two noses,—the skull is in the Montpellier Museum. The case is "a rhinoderm variety of a splanchnoderm monster." These monsters arise from the more or less complete merging of two embryos,—two primitive individuals fuse and form one. Although having but one brain this monster originated from two embryos. Teratology has evidently something to say to the spiritistic philosophers about the unity of the ego. The paper has 3 text-figures.

— Action du condyle et du muscle temporal sur endocrâne. (*Ibid.*, 398-400.) Treats, with 1 text-figure (cranium of hydrocephalous infant), of the effects of contact of the condyle and the temporal muscle with the skull,—the increased elevation of the glenoid fossa in the interior of the skull, the increased prominence of the temporal fossa by reason of internal pressure, etc.

— Femur: empreinte iliaque et angle du col. (*Ibid.*, 377-381.) Treats, with 2 text-figures, of the iliac imprint

of the femur (extent, form, edges, elevation, degree, mechanism of formation, etc.) and the angle of the neck of the femur (normal and pathological). The angle of the femoral neck diminishes during growth, but is the same in adult and old age.

Roediger (M.) Karl Weinhold. Gedächtnisrede. (*Zschr. d. Ver. f. Volkskunde*, Berlin, 1901, XI, 353-376.) Memorial address on Professor Karl Weinhold before the *Berlin Verein für Volkskunde*, October 25, 1901. At pages 364-376 is given a chronological list of Weinhold's publications, 1843-1901, including book-reviews, etc.

Showerman (G.) The great mother of the gods. (*Bull. Univ. Wisc.*, Madison, 1901, Phil.-Lit. ser., I, No. 3, 1-110.) In this interesting and valuable essay the author summarizes, with 4 plates and 2 text-figures, our knowledge of the "great mother" and her cult from its beginnings in ancient Asia to its eclipse with the Roman empire. The religious, artistic, and literary aspects of the subject are all considered.

Simons (Sarah E.) Social assimilation. (*Amer. J. Sociol.*, Chicago, 1901, VII, 53-79, 234-274.) These second and third sections treat of assimilation in the ancient world (Egypt, Greece, Rome), in the Middle Ages in Europe, and in modern times in Russia.

Sokeland (H.) On ancient desmerys or steelyards. (*Ann. Rep. Smithsonian Inst.*, 1900, Wash., 1901, 551-564.) This article, with 22 text-figures, is translated from the *Verhandlungen der Berliner Gesellschaft für Anthropologie* for 1900. Treats of the steelyard among the ancient Egyptians, Romans, Hindus and other Asiatic peoples, Germans, etc.

Szawlowski (J.) Ueber einige seltene Variationen an der Wirbelsäule beim Menschen. (*Anat. Anz.*, Jena, 1901, XX, 305-320.) Treats, with 6 text-figures, of articulating rudiments on the fourth cervical vertebra, transverse foramina in the fifth lumbar vertebra and the first sacral vertebra, a peculiar process on the anterior surface of the first coccygeal vertebra.

Teunin (Sara.) Topographisch-anthropometrische Untersuchung über die Proportionsverhältnisse des weiblichen Körpers. (*Arch. f. Anthr.*, Braunsch.

Teumin—Continued.

1901, XXVII, 379-432.) In this extensive article Dr Teumin gives the results of the measurements (45 items) of 100 women students of the University of Zürich.—Jewish 47 (Little Russian 31, Polish 16), Russian 32 (Little Russian 4, Great Russian 20), Polish 14, Lithuanian 3, German 3, Armenian 1,—taken in the summer and fall of 1899. The numbers concerned are too small to allow of dogmatic conclusions, but some interesting differences appear to be indicated.

Thompson (A. H.) The cultural significance of primitive implements and weapons. (Amer. Anth., Chicago, 1901, XXIV, 37-43.) This first part of Dr Thompson's paper deals with "the gifts of nature." From the vegetal kingdom came "limbs, fruits, etc., of trees, which might be crudely employed as tools and weapons without modification," the result of prehuman arboreal life. Thus arose the club, the throwing-stick, the boomerang, and like weapons and implements. From the mineral kingdom came stones of various forms and densities ready to the hand, the flint chip, etc., whence the hammer, the knife, the arrowhead. The animal world provided bones, teeth, horn, shell, etc., from which valuable weapons and implements were made.

del Torto (O.) Trasferiti e raccordi psichici. (Arch. p. l'Antrop., Firenze, 1901, XXXI, 479-500.) General discussion of thought-transference and allied subjects. The author reports some of his own experiments.

Variot (G.) L'élevage des enfants atrophiques par l'emploi méthodique du lait stérilisé. (Rev. Scientif., Paris, 1901, 4^e s., XVII, 225-235.) Gives curves for growth in weight of several atrophic infants fed on sterilized milk. These figures prove the ability of such children to gain the whole or a greater part of the normal weight when well and properly fed.

Voss (A.) Nachahmungen von Metall-Gefässen in der prähistorischen Keramik. (Verh. d. Berl. Ges. f. Anth., 1901, 277-284.) Discusses, with 11 text-figures, the imitation of metal vessels in the prehistoric pottery of central Europe. Among the examples cited are the imitation of a "beak-vessel" in

clay from the cemetery of Molinazzo-Arbedo in Tessino, a bird-head handled cup from Weissenacker in Bavaria, a bronze-pail imitated by clay vessel from Forbde in West Haveland, a flat vessel from Brandenburg, a vessel of unusual form from Buchheim in southern Bavaria.

Wake (C. S.) The beard as a test for classification of races. (Amer. Antiq., Chicago, 1901, XXIV, 43-45.) A translation of pages 74-77 of Wake's article *La barbe considérée comme caractère de race*, published in the *Revue d'Anthropologie*, Paris, 1880, 2^e s., III, 34-77.

Waldeyer (A.) Schädelstativ. (Verh. d. Berl. Ges. f. Anth., 1901, 267.) Brief account of a stand for skulls devised by Dr Seifert of the Anatomical Institute.

Weinberg (K. D.) Novýěshie ospyěchi k' ovdasti antropologii kostnot sistemy. (Russk. Antrop. Zbur., Moskva, 1901, II, No. 2, 92-125.) This elaborate résumé of recent studies of the osseous system of the human body is illustrated with 3 text-figures, and the accompanying bibliography (pages 111-125), which (with a few exceptions) relates to 1899-1900, embraces 315 titles in all European languages.

Wilson (T.) Classification des pointes de flèches, des points de lances et des couteaux en pierre. (Anthropologie, Paris, 1901, XII, 568-594.) This article, illustrated with 15 plates, classifies arrowheads, lance-points, and stone knives under four large divisions (based upon the general form) with many subdivisions or classes. The four chief forms are the leaf-shaped, the triangular, the pedunculated, and the aberrant. This paper is based upon the more extended study by Dr Wilson in the *Report of the U. S. National Museum for 1897*.

EUROPE

Addy (S. O.) Garland day at Castleton. (Folk-Lore, Lond., 1901, XII, 394-430.) A somewhat detailed account, with 4 plates, of the ceremony of "garland day" at the village of Castleton, in the High Peak of Derbyshire. Morris-dancers with a king and a queen (man dressed in woman's clothes) parambulate the village to music, after which the garlands are raised to the top

Addy—Continued.

of the church tower and fixed upon the pinnacles. The tune to which the procession moves is given with notes on the air known as "Rowty Tow," and some of the words sang to it. The ceremony resembles that of the "grass king" in some parts of Germany. The introduction (pages 395-407) treats of the folklore of Castleton in general.

Adler (M.) Zwei Volkslieder aus dem Geiselthal bei Merseburg. (*Ztschr. d. Ver. f. Volkskunde*, Berlin, 1901, XI, 459-461.) Texts of two folk-songs, one of which seems historically based upon the suicide of an unfortunate girl some 30 years ago. The author considers it "an example of how folk-songs originate, live on, and, by their continuance, preserve the knowledge of events unremembered by official documents."

Amafi (G.) Novellazze raccolte in Tegiano, Prov. di Salerno. (*Arch. p. l. Stud. d. Trad. Pop.*, Palermo-Torino, 1901, XX, 156-164, 300-311.) Nos. XIII-XXIII of folktales from Tegiano, with comparative bibliographical references.

Ammon (O.) Tipi di razza pura in popolazioni miste. (*Arch. p. l'Antrop.*, Firenze, 1901, XXXI, 377-380.) Brief discussion of the fate of pure race types in mixed populations, with special reference to Baden. The physical characters of race are transmitted in such a way that all possible theoretical combinations occur.—heredity tends to mix distinct characters (dark eyes and blond hair, e. g.). The more characters we consider the less pure types do we find. Very rare is the combination of 5 characters of the so-called Teutonic type (blue eyes, blond hair, white skin, tall stature, mesocephaly)—only 1.45% in Baden. The consideration of other characters would lower still more the percentage. The number of individuals possessing the original characters, when the mixture is complete, can never sink below a certain limit since such individuals are always reproduced by new combinations. Alleged typically pure racial specimens may thus be nothing more than accidental combinations. Individuals of "pure race" may exist no more than peoples of "pure race."

Bacher (J.) Von dem deutschen Grenzposten Lunérn im wälschen Südtirol.

(*Ztschr. d. Ver. f. Volkskunde*, Berlin, 1901, XI, 443-452.) Continued from previous number. Contains 66 items (dialect text and literary German rendering) of folk-beliefs, customs and sayings concerning birth and baptism, childhood, youth and love, courting and marriage.

Balladaro (A.) Spigolature poetiche Veronesi. (*Arch. p. l. Stud. d. Trad. Pop.*, Palermo-Torino, 1901, XX, 195-201.) These "poetical gleanings" consist of some 25 brief folk-poems on a variety of topics, from divers parts of the region of Verona (from Façengo chiefly). Some prayers and lullabies are included. A number of the verses are satirical.

— Filastrocche popolari Veronesi. (*Ibid.*, 311-315.) Text of eight "nonsense" poems from the region of Verona, with some explanatory notes.

Bellino (A.) Habitação urbana. (Portugalia, Porto, 1901, I, 613-618.) Brief account, with 11 text-figures, of remarkable urban dwellings in Braga and Guimarães.

Bloch (A.) De l'origine des brachycéphales néolithiques de la France. (*Anthropologie*, Paris, 1901, XII, 341-349.) From the consideration of the variation of the cephalic indices of the race of Petit-Morin Dr Bloch concludes that they exemplify not a mixed race of longheads and shortheads, but a dolichocephalic race in process of metamorphosis into a brachycephalic, thereby giving rise to neolithic shortheads in France. The presence of the latter is due to anatomical variation and represents no sudden inroad of brachycephalic tribes from abroad. The presence of the metopic suture "is a manifest proof of the gradual transformation of the primitive dolichocephalic type into a brachycephalic." At Petit-Morin this had been already accomplished, but not at Baumes-Chaudes. The author's general thesis is that "the neolithic brachycephals of France are the direct descendants, without intermixture, of the neolithic dolichocephals, which last are themselves the descendants of the paleolithic dolichocephals." The discussion following this paper was rather against the author.

Boite (J.) Eine geistliche Auslegung des Kartenspiels. (*Ztschr. d. Ver. f. Volkskunde*, Berlin, 1901, XI, 376-406.) A

Boite—Continued.

well-documented account of the "spiritual interpretation" of playing-cards,—the usual form is the tale of the excuse of a soldier found card-playing in church,—in the European folk-literature of the nineteenth century. The tale is known from French, English, Swedish, Danish, Dutch, German, Spanish, Portuguese, Italian, and Icelandic sources. The texts of the oldest German, the Portuguese, and the Italian versions of the tale are given (pages 382-387). Pages 387-405 treat of the spiritual explanations in folk-songs ("number songs") of the card-numbers 1-to and the lists of sacred numbers 1-12, in Europe, the Orient, etc. The texts and music of a number of the songs are given. In the versions of the soldier's excuse the card-numbers appear as follows: Ace = one God, one belief, one baptism; deuce = Old and New Testament, body and soul, God and Christ, two natures of Christ, two thieves, virtue and vice, two sacraments, two tables of the law; trey = Trinity, the three days of Jonah in the whale's belly, three Graces; four = the last things (death, judgment, hell, paradise), the evangelists, the seasons, the four estates; five = the wise virgins, the wounds of Christ, the senses; six = days of the creation, work-days, the petitions in the Lord's Prayer, the pilgrimages of man; seven = the day of rest, the words of Christ on the cross, the Sacraments, the petitions in the Lord's Prayer, the wonders of the world, the planets; eight = the family of Noah, the benedictions of the serimon on the mount, the mountains of Calvary; nine = the ungrateful lepers, the choirs of angels, the virgins who adored Christ, the Muses, the hours of Christ on the cross; ten = the ten commandments; Jacks = Judas (Jack of clubs or of spades) and the soldiers who maltreated Jesus; Queens = Queen of Sheba, Mary and the three women at the grave of Christ; Kings = God, the sovereign, Herod, the three Kings at the cradle of Christ, the judges of Christ, the evangelists. Besides all this, the four colors signify the seasons, red and black the blood and passions of Christ, diamonds the place where the body of Christ was put (also the four corners of the church); spades the spear or the grave of Christ; hearts the love of Christ, or the devotion of the church-goer; clover the union, real, and love of the three women who went to the

tomb, the cross, or the crown of thorns. The twelve card-pictures represent the months, the fifty-two cards the weeks, the 365 points the days of the year.

Braga (T.) Sobre as estampas ou gravuras dos livros populares. (Portugalia, Porto, 1901, 1, 497-512.) This interesting account of prints and engravings in Portuguese popular literature is illustrated with 46 text-figures. The *âncora de cordel* correspond to the French *Bibliothèque bleue* and the Spanish *Pilgrus sueltos*. By their contents very many of these brochures show their origin from the popular literature of medieval Europe,—reduced and distorted legends and stories of heathen heroes and Christian saints, tales of adventure and shipwreck, accounts of monsters, calamities, etc., great natural phenomena, comical and facetious deeds and escapades. The most picturesque thing about them is the illustrations, a necessary part of these little books. A good many of these pictures are pretty rare examples of Portuguese esthetics, both those going with verse and those with prose. Some of the flysheets had an immense circulation. When the old xylography is being superseded by linocography, illustration becomes accurate and spontaneous, natural and esthetic. So the future of illustration would seem to be the popularizing of photographs and esthetic ideas of the great masters. Thus it will still exercise a great suggestive rôle in the popular imagination. The illustrations for such works as the *Historia do Propheta e Santo Rei David*, *Historia do Imperador Carlos Magno*, the numerous *Alfas*, the *Lunario Perpetuo* (astrological almanacs), etc., reproduced by the author are curious and sometimes wonderful. Many literary works got into popular favor in this way—*Don Quixote*, *Gil Blas*, *Paul and Virginia*, *Robinson Crusoe*, *Gulliver's Travels*, *Thousand and One Nights*, besides native Portuguese books. The subject of Portuguese popular literature in general was treated by Braga at pages 448-498 of his former study *O Povo portuguez nos seus costumes, creanças e tradições* (Lisbon, 1885).

Calvert (F.) Ein Idol vom thracischen Chersones. (Verh. d. Berl. Ges. f. Anthr., 1901, 329-330.) This brief note (in English), with text-figure, describes an idol in white marble from Kilia (Coza), representing "a grotesque human form," with wings and some

Calvert—Continued.

other bird-like attributes. The author suggests it may be intended for the Palladium.

Cameron (Mary L.) A survival of tree-worship. (Folk-Lore, Lond., 1901, XII, 455-456.) Brief account of the "Madonnas in the oak," at the edge of the forests of Mt. Aemata, Tuscany. The church-authorities have been unable to prevent the people adoring their tree.

Capitan (L.) Gravures rupestres dans les Vosges. (Anthropologie, Paris, 1901, XII, 539-540.) Brief account of the sculptures on the Pierre à Mulet in the Bois de Marey near Marigny-les-Bains, Department of the Vosges. Dr. Capitan, who examined the rock quite recently, found more figures than those reported by Voelot. Among these are numerous crosses, two horseshoes (one of a Gallic type), pittings, etc., and many other curious signs. These inscriptions are probably quite ancient. The author suggests comparison with the *masse* ("property marks") of the nomadic Arabs. They may have also a religious or fetishistic significance.

— Sur les grands anneaux en pierre de l'époque néolithique. (Ibid., 556-557.) Brief discussion of the large flat stone rings of hard stone (jadeite, nephrite, etc.) found at Quiberon, Volney, Taranou, etc. Dr. Capitan compares them with similar rings of less size in use as priestly ornaments in Japan, farther India, Mexico. Their presence in Gaulish sepulchres may have a religious significance. The breast-rings of the menhir-statues of the Aveyron may thus represent real stone rings of this kind and not rings of metal as some have supposed.

Cauderlier (G.) Les causes de la dépopulation de la France. (Bull. et Mém. Soc. d'Anth. de Paris, 1901, V^e s., II, 520-540.) The author's general thesis, discussed more at length in his recent book, *Les lois de la population*, is that "population increases with the increase of the proportion of resources to needs, and vice versa." This law has, however, modifications, exceptions, and particular exemplifications. Among the results of this general law are: Population varies according to economic conditions; the depopulation of the country districts and mountain val-

leys; tendency of coastal fishing populations to increase (the sea-food being inexhaustible); countries rich in mineral wealth will increase indefinitely in population with proper means of transportation at home and abroad; countries dependent upon commerce principally will increase in population indefinitely if trade is not interfered with by legislation; the rich and well-to-do population of the country seeks the city where the means are at hand to satisfy the new needs created by the progress of civilization; centralization of public service in one town or in a few injures the general population; laws of succession are without influence upon the development of population, except as they may increase or decrease resources and needs; so too with all legislative and fiscal measures intended to increase directly marriages and births; the celibacy of priests and monks and nuns will influence very little the total population, because the majority of them render to the collectivity what services they can,—not so however with the idle celibates who give society no service; the diminution of mortality acts differently upon the total population according to whether it bears upon men and women capable of working and producing or upon the incapable. The discussion of this paper revealed many disagreements with the author.

Chauvet (G.) Poteries préhistoriques à ornements géométriques en creux, vallée de la Charente. (Anthropologie, Paris, 1901, XII, 641-661.) Discusses, with 1 plate and 16 text-figures, the remains of pottery with incised geometric ornamentation discovered at the "station" of Bois du Roc. The first part of the paper gives a résumé, with numerous bibliographical references, of our knowledge of the distribution of this kind of pottery over Europe and the Mediterranean region generally. According to the author in neolithic pottery of the Charente valley this sort of ornamentation (rare on funeral pottery, more common on camp pottery) has no very deep lines, nor were the incisions filled with coloring matter; this ornamentation reaches its maximum with the age of bronze—the incisions deeper and larger, perhaps to receive coloring matter; the geometric ornamentation does not disappear with the Iron age, but the incisions do; the

Chauvet—Continued.

variations in type are such as might readily occur in the local development of the industry. The study of the pottery of Bois du Roc seems to "indicate closer relations of central Europe with Spain and the Mediterranean."

Coelho (F. A.) *A pedagogia do povo Português*. (Portugalia, Porto, 1901, I, 475-496.) Continued from the previous two numbers. This third chapter deals with proverbs in general. After a general introduction (historical and bibliographical) the author discusses Portuguese proverbs and proverbial phrases under the following heads: Religious, ecclesiastical (heathen-Christian).—God, Christ, Trinity, Saints, Devil, Clergy and ecclesiastical persons, Paradise, church, religious acts, festivals, Rome, etc.; geographical and historical (medieval and modern).—Moors, modern peoples, countries and places, institutions, customs, weights, measures, money, military and civil personages, historical facts and persons, etc. Many of the proverbs relating to Christian matters are really of heathen origin, proper names, etc., being changed. Among the words for "proverb" now or formerly in use in Portuguese are the following: *verbo* or *verso antigo* (used in the *Cancioneiros* of the XII-XIV centuries), *exemplo* (common in the XV-XVI centuries), *refrão* (borrowed from France in the Middle Ages), *adagio* (a purely literary word), *ditado* (popular in sense of "proverb"), *proverbo* (literary, but becoming popular). Dr Coelho prefers the last term. A curious term for "the proverb runs, etc.," is "the parrot (*papagaio*) says." The article is to be continued in the next number.

—*Alfaisa agrícola portuguesa*. (Ibid., 398-416, 633-649.) An elaborate and interesting account, with 23 text-figures, of Portuguese agricultural implements. Dr Coelho concludes that two facts especially are brought out by this study, viz., the very archaic form of many of the implements and the exceptional preponderance of Latin terminology. The last fact proves rather a greater Romanisation in the matter of language than an origin of some of these implements and appliances through contact with the Latins.

Cordell (E. F.) The medicine and doctors of Horace. (Bull. J. H. U. Hosp., Baltimore, 1901, XII, 233-240.) An interesting discussion of the references to physicians and medical matters in the old Roman poet. The author remarks that "nowhere in all his extant writings is there a word of unkindness or ridicule of the professors of medicine." This is noteworthy, "when we reflect upon the character of the Roman profession of his day, just emerging from obscurity, and chiefly in the hands of slaves and foreign adventurers, bent in most cases solely upon self-aggrandizement." Horace, too, was a decided invalid for the last half of his life. A list of diseases mentioned by Horace and of his limited *materia medica* is given on pages 238 and 239.

Corsi (G. B.) *La mezza quaresima in Siena e nel Senese*. (Arch. p. l. Stud. d. Trad. Pop., Palermo-Torino, 1901, XX, 145-155.) Brief account of the customs and ceremonies at Mid-Lent in Siena and the surrounding region, based on the diary (1785-1838) of A. F. Bandinì. Bonfires, dances, puppet-shows directed against the monks, effigy-burning, feasts, etc., are noted. According to Corsi a sort of charivari is still enacted on this day in parts of the Siena country. The play, too, survives, but "the old woman" has taken the place of the monk. The verses recited are given on pages 151-155.

Coutil (L.) *L'industrie primitive du cuivre et du bronze en Normandie. L'analyse des principales formes d'instruments*. (Anthropologie, Paris, 1901, XII, 624-628.) Gives details of analyses of axes of red copper from the department of Eure and bronze axes and swords from the departments of Seine-Inférieure and Eure in Normandy. From these analyses the author concludes that classification by amount of tin is not decisive. Two copper axes from Leubécourt, about the same in form and size, contained the one 0.4 of tin, the other 3.8. In the bronze axes the tin varied from 10.1 to 18.1. The iron in the bronze sword varies from 1.8 to 4.2 per cent.

Crocioni (G.) *Novelle popolari in dialetto di Canistro*. (Ibid., 185-194.) Dialect texts of six short folktales from Canistro in Aquila, with glossary of difficult and unusual words.

da Cruz (P. B.) Amphora de barro proveniente de Valencia del Cid, Hispania. (Portugalia, Porto, 1901, 1, 601-602.) Treats of a vase from Valencia del Cid, in Spain, probably an imitation (of the Greek) made in southern Italy.

— Arcabuzes de serpe e morrio (Ibid., 603-604.) Notes on the mechanism of the sixteenth century arquebus.

Deichmüller (Dr) Aufruf über die Verzeichnung der in Sachsen vorkommenden Alterthümer nebst eines Probe des ausgefüllten Fragebogens. (Verh. d. Berl. Ges. f. Anthr., 1901, 412-414.) *Questionnaire for the marking of archaeological remains in Saxony*,—settlements, dwellings, work-places; fortifications, walls, etc.; graves; places of sacrifice, cult ceremony and judgment; commercial routes, mines, agriculture.

Feilberg (H. F.) Der böse Blick in nordischer Ueberlieferung. (Ztschr. d. Ver. f. Volkskunde, Berlin, 1901, XI, 420-430.) Concluded from previous number. Additional data concerning the "evil eye" in Norse tradition. One use of the "evil eye" was to make blast the sword of an opponent. To look backwards through one's legs is also a magic rite.

Ferraro (G.) Due *asempi* in dialetto Monferrino. (Arch. p. l. Stud. d. Trad. Pop., Palermo-Torino, 1901, XX, 319-322.) Texts of two *asempi* or moral tales for old maids in the Monferrino dialect, with versions in literary Italian.

— Tocaferro. (Ibid., 412-415.) First part of a discussion of the game of *Tocaferro* and the folklore of "thunder-stones," iron, etc.

Fortes (J.) Lagar de Mouras. (Portugalia, Porto, 1901, 1, 606-608.) Describes, with plan, the so-called "Wine-press of the Moors" in Gondar.

Fortano (G.) La festa di mezz' Agosto in Gioiosa Marea. (Arch. p. l. Stud. d. Trad. Pop., Palermo-Torino, 1901, XX, 245-249.) Brief account of the festival of mid-August at Gioiosa Marea. These ceremonies are partly religious and partly secular. Engaged couples figure much in the festivities.

Fouju (G.) Sépulture néolithique de Presles, Seine-et-Oise. (Bull. et Mém.

Soc. d' Anthr. de Paris, 1901, v^e s., II, 373-376.) Brief account, with 3 text-figures, of the finds at the neolithic burial-place of Presles (stone chamber, resembling some dolmens of the Aveyron and Morbihan). Beside osseous remains (for the discussion of which see the article of M. Manouvrier), there were also found a fine polished flint axe, another of serpentine, fragment of characteristic neolithic pottery. The cover of the chamber is missing, and certain fragments of Merovingian pottery discovered may have been introduced at the time of its removal. See Manouvrier.

— Silex des stations néolithiques de Presles. (Ibid., 376.) Brief notice of flints found on the surface at Mont-Joli and Carrière-Martin near the neolithic burial-place previously described.

Friederichsen (M.) Beiträge zur geographischen Charakteristik der Bretagne und des französischen Zentralmassivs. (Globus, Braunschwg., 1901, LXXX, 297-302, 315-323, 334-339.) This article with 25 text-illustrations contains a few remarks upon the stone monuments of Brittany.

Furno (A.) Uno stornellaio Fiorentino. (Arch. p. l. Stud. d. Trad. Pop., Palermo-Torino, 1901, XX, 340-347.) Brief account of a Florentine singer of *stornelli*, with numerous specimens of his verses and the notes of the music.

von Gabnay (F.) Rachepuppen aus Ungarn. (Globus, Braunschwg., 1901, LXXX, 373.) Brief account, with text-figure, of a witch-doll from the Hungarian Roumanians of Petris in the county of Temes. Such dolls are made by old witches for young women who have been deceived by their lovers.

Götze (A.) Antwort auf die Angriffe des Hrn. Reinecke. (Verh. d. Berl. Ges. f. Anthr., 1901, 414-422.) Reply to F. Reinecke's criticism (in the *Verhandlungen* for 1900) of the author's views on neolithic pottery, its ornamentation, chronological succession of types, etc.

de la Grancière (A.) Passage du néolithique aux métaux en Armorique occidentale et plus spécialement dans le Morbihan. (Anthropologie, Paris, 1901, XII, 629-640.) According to the author, in Morbihan and all western Brittany, there is no evidence of a veri-

de la Gracelière—*Continued.*

table Copper age preceding that of Bronze; nor has any axe of pure copper made upon the model of polished stone axes been found in western Armorica, as has been the case in certain parts of southern and central Europe. The transition from the Stone to the Bronze age in Brittany was not at all sudden. The use of bronze came in gradually and stone implements survived long after its beginning as may be seen from the "furniture" of the Armorican monuments, and the structure of the monuments themselves.

Grip (E.) Skuttungsmålets ljudlära. (Svenska Landsmålen, Stockholm, 1901, XVIII, NO. 6, 1-186.) This elaborate study of the phonology of the dialect of Skuttunge is a thesis for the doctor's degree at the University of Uppsala. The material was collected in the summers of 1896-1900.

da Guerra (L. de F.) Uma povoação subterrada. (Portugalia, Porto, 1901, 1, 609-612.) Brief account of the buried town of Neiva (submerged in the latter part of the sixteenth century).

Halbherr (F.) Report on the researches at Prasos. (Amer. J. Archaeol., Norwood, Mass., 1901, ser. 2, v, 371-392.) Brief account, with 3 plates and 25 text-figures, of investigations at the ancient Cretan city of Prasos, with descriptions of objects found. The votive terra-cottas are particularly rich and primitive. The little bronzes resemble those of Mt Ida, but they do not predominate at Prasos. Like Mt Ida, Prasos was a "place of worship of ancient origin, practiced without a temple, in the midst of the wildness of nature," at Mt Ida in a cave, at Prasos in the open air.

— Ruins of unknown cities at Haghios Ilias and Prinia. (Ibid., 393-403.) Brief account, with 17 text-figures, of finds at the unknown Cretan cities of Haghios Ilias in Pediada and Prinia in Malevisi. Where the chief temple of the first city once stood is now the little country church of St. Elijah. Some of the inscriptions are very archaic.

Hermet (L'Abb.) Statues-menhirs de l'Aveyron, du Tarn, et de l'Hérault. (Anthropologie, Paris, 1901, XII, 595-608.) Brief account of the menhir-statues of Aveyron (12 in number),

Tarn (8), Hérault (2), with remarks as to their age and intention. Of these 9 are of males, 6 of females, 7 doubtful.

Hoernes (M.) Gegenwärtiger Stand der keltischen Archäologie. (Globus, Brunschwig, 1901, LXXX, 320-332.) Résumé, based on Déchelette's recent article. "L'Archéologie Celtique," in the *Revue de synthèse historique*. Déchelette divides the "Keltic period" (which includes the last eight centuries B.C.) into proto-Keltic (Hallstatt) and Keltic proper (La Tène). The Keltic inroad is assigned a much later date than many other authorities would give it. Altogether Déchelette takes too conservative a view of the whole matter. Keltic imitation of Greek and Roman art is given prominence by Déchelette.

Hoffmann-Krayer (E.) Die Berufe in der Volkskunde. (Schweiz. Arch. f. Volkskunde, Zürich, 1901, v, 304-308.) Gives dialect texts of a number of popular and satirical verses relating to trades and professions, particularly that of the tailor. The rhymes cited are chiefly from Zürich.

Höfler (M.) Die Hedwig-Sohlen. (Zeichn. d. Ver. f. Volkskunde, Berlin, 1901, XI, 455-458.) Brief account, with 1 plate (14 figs.), of the "stocking-soles," or "St Hedwig's soles," a species of bread or cake baked in Breslau, Neisse, Treibnitz, etc., on the 17th October in honor of St Hedwig, who is said to have founded this baking as a gift to the poor. The author is inclined to believe that we have here a transformation of the older Teutonic "death shoe" or "sacrificial shoe" into a charity-loaf, etc.

Hull (Eleanor) The silver bough in Irish legend. (Folk-Lore, Lond., 1901, XII, 431-445.) Discusses the "silver bough" referred to in the *Voyage of Bran*, the *Stebbed of Cuchulainn*, *Cormac's Adventure in the Land of Promised*, *Conla Ruadh*, and other old Irish tales and stories and its relation to the talismanic apple-branch and "golden bough" of other legends and myths. Miss Hull asks in conclusion: "Is not the Gaelic apple-bough of entrance into the unseen-world nearer in idea to the conception of Virgil [of the bough plucked by command of the Sybil and carried by Æneas into the under-world] than the legend of

Hall—Continued.

the bloody sacrifice within the groves of Nemi, or the story of the flight of Orestes from which this is supposed to have had its origin?"

Ilwolf (F.) Volkstümliches aus Jonathan Swift. (Ztschr. d. Ver. f. Volkskunde, Berlin, 1901, xi, 463-464.) The author compares the "penny-tossing" with the Steirer game "Annäuerln"; also Swift's remarks about holy-water sprinkling with procedures still in use in the Alpine country.

Ive (A.) Novelline, storie, leggende in Veglioto odierno. (Arch. p. l. Stud. d. Trad. Pop., Palermo-Torino, 1901, xx, 287-299.) Continued from previous volume. Nos. IV-XVII of brief tales and legends in modern Veglioto.

Jäger (J.) Das Bozener Land. Eine ordgeschichtliche Betrachtung. (Globus, Braunschwg., 1901, LXXX, 356-358.) Towards the close a few notes on relics of Roman occupation (place-names).

Jegerlehner (J.) Sagen aus dem Val d'Anniviers. (Schweiz. Arch. f. Volkskunde, Zürich, 1901, v, 387-393.) German text of 27 brief tales from the Val d'Anniviers between the Rhone glacier and the lake of Geneva. These folk-tales were gathered in July and September, 1900, and January, 1901. They treat of fairies, cows, buried treasures, ghosts, the devil, witches, human sacrifice, robbers, magic, etc.

Jetta (J.) & Giannini (G.) L'ultimo giorno di carnevale a Bibbiena. (Arch. p. l. Stud. d. Trad. Pop., Palermo-Torino, 1901, xx, 209-218.) Brief account of the songs, ceremonies, etc., of the last day of the carnival at Bibbiena in Casentino, with bibliographical notes. The texts of the songs are given. The ceremonies in question are said to go back at least to the middle of the 14th century.

Kahle (B.) Von de la Martinidres Reise nach dem Norden. (Ztschr. d. Ver. f. Volkskunde, Berlin, 1901, xi, 431-443.) Recanés from the German edition of 1706, the chief items concerning Norway, the Lapps, the Rosians (marriage-customs, particularly). Samoyeds, etc., in the account of his travels in far northern countries in the year 1653, given by the surgeon, Pierre Martin de la Martinidre. The oldest edition extant seems to be a French one published at Paris

in 1671. The natives of the island of Zembla were reported to worship trees shaped rudely to resemble the human form. The name for such a figure is given as *feittus*, evidently, as Feilberg notes, the Portuguese *feitiço*, our *fetish*, an early instance of the use of this word in German.

Kasser (H.) Die Reinhardt'sche Sammlung von Schweizer Trachten aus den Jahren 1789-1797. (Schweiz. Arch. f. Volkskunde, Zürich, 1901, v, 269-280.) Brief account, with 2 plates (one colored), of the Reinhardt collection of paintings of Swiss costumes, now in the Bern Historical Museum. Of the 124 paintings 9 represent Zürich, 12 Bern, 7 Luzern, 4 Uri, 9 Schwyz, 3 Unterwalden, 4 Zug, 1 Appenzell, 4 Glarus, 10 Freiburg, 7 Solothurn, 1 Thurgau, 3 Basel, 8 Schaffhausen, 3 Appenzell A./Rh., 4 Appenzell L./Rh., 7 St. Gallen, 1 Baselland, 15 Aargau, 2 Waadt, 1 Valais, 2 Neuchâtel, 4 Schwarzwald, 1 Breisgauwald. They were all painted by Joseph Reinhardt between 1789 and 1797. Of the paintings 118 containing 270 portraits are dated, and the artist has inscribed upon the back of each picture the names of his subjects. The paintings are all at full length. The collection is of great value for the historical study of costume.

Kollmann (J.) Die Fingerspitzen aus dem Pfahlbau von Corcelletes, Schweiz. (Arch. p. l'Anthr., 1901, XXXI, 407-412.) General discussion, with 2 text-figures, of the impressions of finger-ends, nails, and knuckles on pottery from the lake-dwelling of Corcelletes on the left shore of Lake Neuchâtel. See *American Anthropologist*, 1901, III, 183.

Kraitschek (G.) Der alpine Typus. (Cbl. f. Anthr., Jena, 1901, VI, 321-330.) The author takes the view that Ripley's assumption of three European basal races (Teutonic, Alpine, Mediterranean) is untenable, since the so-called "Alpine race" is an evidently mixed stock, and not in any sense co-equal with the other two. The variation in the characters of the "Alpine type" is far too great to allow us to reckon it as a primitive race-form,—roundish head and medium stature seem to be about the only constant factors here; color of skin, eyes, hair, form of face, nose, etc., differ widely in the "Alpine type." Often we meet with a mixture of Teu-

Kraitschek.—*Continued.*

tonic skull and Mongolian face, or of a broad head and a long face, etc.—we have to do with diverse combinations of short-heads and long-heads. Ripley's term (the *homo alpinus* of Linnæus) is better than the other designations (Celtic, Ligurian, Turanian, etc.), provided it does not carry the implication that the whole Alpine region is populated by a unitary type.

Krause (E.) Eisensachen der Wikinger-Zeit von Mewe, Westpr. (Verh. d. Berl. Ges. f. Anthr., 1901, 350-352.) Brief account of the iron objects (sword, stirrup, buckles, buttons, snaffles, weight, lance-point, knives, nails, etc.) discovered at the first find of the viking period hitherto made in West Prussia. The weight had been coated with bronze. A more detailed description of this important find is promised later.

La Colombina in Firenze nel sabato santo del 1901. (Arch. p. l. Stud. d. Trad. Pop., Palermo-Torino, 1901, XX, 416-417.) Brief account of the "flight of the dove" at Easter in Florence,—still an augury of an auspicious season.

La Corte-Cailler (G.) Burle del secolo XVII agli schiavi in Messina. (Ibid., 202-208.) Cites from a MS. of 1695 passages concerning the slaves in Messina, their confraternity, and their ceremonial processions, together with many silly actions and jests on their part and against them by the populace of Messina.

— Burle, facezie e motti dei monelli in Messina nel secolo XVII. (Ibid., 365-386.) Cites from a MS. of 1695 examples of the jests, satire, *bon-mot*, facetiousness, etc., of the rogues, pick-pockets, etc., of Messina in the 17th century. Not only the monks, but the highest in the land fell victims to the rude wit of these fellows. The negro slaves were an especial object of their raillery. They applauded the Spaniards and abused the French.

Lampa (S. M.) Fålleberg. Anteckningar om en gammal Västgötaby. (Svenska Landsmälen, Stockholm, 1901, XIX, No. 5, 1-32.) Treats, with 13 illustrations and 4 maps, of the old town of Fålleberg in West Gotland from the 13th century down. Houses, inhabitants, etc., at various periods are discussed.

La vie de Paris, les cris de la rue. (Arch. p. l. Stud. d. Trad. Pop., Palermo-Torino, 1901, XX, 253-256.) Brief description of the life of the streets in Paris, the street-cries, etc., from winter to winter again.

Laville (A.) Étude de couches Sannoisiennes démantelées, délayées et déposées sur les pentes à l'époque pléistocène à Montmagny, Villetaneuse et Villejuif. (Bull. et Mém. Soc. d'Anthr. de Paris, 1901, V^e s., II, 338-341.) In this paper (with 3 text-figures) the author reaches the conclusion that the deposits in question "are only a local facies of quaternary clays and represent the strata 2-4 of the middle quaternary beds of the division of Ladjrière." This paper is preliminary to a general work on the quaternary deposits of Paris.

— Silex taillés recueillis à Therdonne, près Beauvais, Oise. (Ibid., 401-402.) Brief note on flints found at Therdonne near Beauvais in August, 1900.

Lockyer (N.) An attempt to ascertain the date of the original construction of Stonehenge from its orientation. (Proc. Roy. Soc. Lond., 1901, LXIX, 137-147.) Taking the view that Stonehenge was a "solar temple," and that the orientation of the avenue accords with that of its axis, the author comes to the conclusion that 1680 (\pm 200) B.C. is the date of construction of this famous monument. See also *Nature*, London, 1901, LXV, 55-57.

de Loë (A.) Déconverte de palafittes en Belgique. (Anthropologie, Paris, 1901, XII, 558-564.) After noting previous discoveries of less extent and importance, the author gives a brief account of the discovery in 1899 of remains of lake-dwellings at Roulers, Emelghem, and Denterghem, in the Mandel valley, West Flanders. The most important finds were made during the draining of a marshy meadow at Denterghem, where 300 oaken piles, many planks, beams, etc., large numbers of flint and bone implements and rejects, fragments of implements of great variety, fragments of human and many bones of a great number of animals (wolf, dog, fox, deer, horse, boar, goat, ox), besides bronze objects, pottery (whole and fragmentary, hand and wheel made) of periods from neolithic times to the 15th century, a coin of

de Loë—Continued.

Trajan, the bottom of an earthen vessel marked *Conatus*, etc., were found. The Denterghem remains are important as indicating the presence in lower Belgium of extensive lake-dwellings and their continuous or repeated occupancy from the neolithic period to about the close of the Middle Ages of European history. The condition and state of the piles, no less than the objects discovered, argue in favor of this view.

Lutzu (P.) La festa di S. Giovanni in Montiferro. (Arch. p. l. Stud. d. Trad. Pop., Palermo-Torino, 1901, XX, 257-259.) Brief account of the festival of St. John in Montiferro, Sardinia.

Macnamara (N. C.) Studien über den prähistorischen Menschen und sein Verhältnis zu der jetzigen Bevölkerung Westeuropas. (Arch. f. Anthr., Brunschwig, 1901, XXVII, 365-378.) In this article, illustrated by 3 plates containing 33 figures of crania and living individuals, the author discusses prehistoric man in general and his relation to the present population of western Europe. Dr. Macnamara maintains, among other things, that the factors determining the growth of the skull are different from those that develop the brain, and that the inhabitants of western Europe in the late tertiary and early quaternary period had, with respect to the shape of the frontal region of their skulls, a form much nearer that of the chimpanzee than is that of the skulls of modern European races. The author refers to the various prehistoric races of Europe—the Iberian (Mediterranean, or Africo-European, "the only race in Europe at the beginning of the neolithic period"), the proto-Aryan (Asiatic, or Cro-Magnon) of the middle neolithic age, the tall, blond Mongolian (North Asiatic, the first brachycephalic race to penetrate into Europe), the south Mongolian (short, brachycephalic) of the Bronze age. Each of these races had its peculiar culture and has left its peculiar relics, and each has its modern representatives today, with their differing temperaments and intellectual equipment. In England and various parts of the Continent. Some of the opinions expressed in this study need a great deal more proof, those especially relating to Asiatic immigration into Europe in prehistoric times. The same questions have been discussed at greater

length by Dr. Macnamara in his book, *Origin and Character of the British People* (London, 1900).

Macquart (E.) L'augmentation de la mortalité. (Bull. et Mém. Soc. d'Anthr. de Paris, 1901, v^e s., II, 432-490.) Brief discussion of the increase in the proportion of still-born to total births in France and other European countries. The author concludes that the generative power of Frenchmen in particular is diminishing, whatever other factors may enter into the result. In the discussion, M. Papillault warned against attributing the increase of still-born to either primordial weakness of the germ or social, intellectual, or other inferiority acting upon it, when so many accidental or incidental factors might share in the matter.

Magni (A.) Pietre cupelliformi nuovamente scoperte nel dintorni di Como. (Riv. Arch. Com., Como, 1901, 19-134.) A detailed account, with 22 plates (53 figs.) and a topographical map, of cupped and pitted stones recently discovered in the neighborhood of Como. The various theories as to the origin of these "cup stones" are discussed, and pages 124-134 are occupied by a chronological (1801-1901) bibliography of the general subject.

Manouvrier (L.) Note sur les ossements recueillis dans la sépulture dolménique de Presles. (Bull. et Mém. Soc. d'Anthr. de Paris, 1901, v^e s., II, 423-427.) Brief account of human bones (fragments of femurs and tibiae) from the dolmen-grave of Presles in Seine-et-Oise. At least 8 persons (2 men, 3 women, and 3 children) were buried there. The measurements of the fragments are given. See Foujon (G.).

Mantegazza (P.) Trent'Anni di storia della Società Italiana d'Antropologia, Etnologia e Psicologia comparata. (Arch. p. l'Antrop., Firenze, 1901, XXXI, 1-7.) Brief account of the origin and labors during the last thirty years of the Italian Anthropological, Ethnological, and Psychological Society, 1871-1901.

Marini (R. A.) Reliquie Carolingie in Val d'Aosta. (Arch. p. l. Stud. d. Trad. Pop., Palermo-Torino, 1901, XX, 348-353.) Brief account of folklore about Charlemagne, etc., in the

Marini—Continued.

Val d'Aosta. St. Bernard and Charlemagne are confused.

di Martino (Mattia) Tesori nascosti da ritrovare indicati e descritti in un antico manoscritto. (Ibid., 323-339.) First part of transcription from "an old ms." (in the Sicilian dialect), of a long account and description of buried treasures and how to recover them. These treasures were "buried" by the Greeks in the time of the Emperor Michael Balbus.

de Mattos (M.) Cultura dos trigueiros no Alentejo. (Portugalia, Porto, 1901, 1, 622.) Brief description of the process of treating the soil, known as *morcias*, in use in Alentejo.

Mayet (L.) Nouvelles recherches sur la répartition géographique du goître et du crétinisme. (Bull. et Mém. Soc. d'Anth. de Paris, 1901, 7^e s., II, 431-436.) General discussion of the subject, with three maps. Goitre is very common in 35 departments, rare in 10, and almost unknown in the rest. It is most frequent in the mountainous regions (except that it is common in Aisne and Orne)—as in Switzerland, Italy, Germany, etc. That endemic goitre and cretinism are related is proved by clinical observation and experiment, but the statistics in the matter hardly yield more than negative results. The causes of idiocy are varied and often multiple, and goitre is neither the only cause, nor the only sign in the regions where both prevail. Dr Mayet notes that there is less and less tendency to-day to make distinctions of importance between idiocy proper and cretinism, while the division of goitre into endemic and sporadic is largely artificial.

Mochi (A.) L'istituzione di un laboratorio antropometrico nel Museo Nazionale d'Antropologia dell'Istituto di Studi Superiori in Firenze. (Arch. p. l'Antrop., Firenze, 1901, XXXI, 310-340.) The author argues for the institution of anthropometric laboratories and sketches the history of the movement which has resulted in the establishment of the Mantegazza memorial laboratory in the Istituto di Studi Superiori, in Florence. At pages 329-335 is given a list of the observations, experiments, measurements, etc., to be undertaken in such a laboratory.

Modin (E.) Härjedalens ortnamn och byggnadsgn. (Svenska Landsmålen, Stockholm, 1901, XIX, No. 2, 1-128.) An interesting study of place-names and folk-history in Härjedal. On pages 12-20 are given lists of terms for mountain and hill, woodland, waters and their environment, meadows, etc. At pages 21-26 is a list of old Härjedal personal names. The names are treated by parishes. The oldest form of the name of the province itself seems to be *Härjardal* in 1273 A.D.

Monteiro (R.) Os palitos. (Portugalia, Porto, 1901, 1, 627-628.) Brief account of one of the old, disappearing industries of Portugal, the making of tooth-picks by hand. The manufacture is traditionally localized in Lousã and Coimbra. The material used is the *Salix alba*. The fabrication has now become a mere automatism, the older ornamentation having been dropped.

Montelius (O.) La chronologie préhistorique en France et en d'autres pays celtiques. (Anthropologie, Paris, 1901, XII, 600-623.) In this article, illustrated by 5 figures showing 63 specimens, the author discusses the chronology of France and other Celtic countries in prehistoric times, relative and absolute.

Morax (R.) Le carnaval dans la vallée de Conches. (Schweiz. Arch. f. Volkskunde, Zürich, 1901, V, 281-287.) Brief account of the amusements and ceremonies of carnival week in the Conches valley of upper Valais. The *Ländler*, dances, music, *Giger Montag*, etc., are referred to. The adults' attempt to suppress the *Ländler*, something akin to flirtation, has not succeeded. At the dances old music is in vogue. During the carnival the natural gaiety of the people has free rein.

de Mortillet (P.) Coup de poing chelléen du Vésinet. (Bull. et Mém. Soc. d'Anth. de Paris, 1901, 7^e s., II, 403.) Note on a fine specimen of "coup de poing" of the Chelles type from Vésinet in Seine-et-Oise.

Natividade (M. V.) Grutas de Alcobaça. (Portugalia, Porto, 1901, 1, 433-474.) This article, with 24 plates containing 237 figures of implements of stone, bone, pottery, etc., and map of the

Natividade—Continued.

archeological province of Alcobaca, gives a brief account of investigations of the various neolithic "stations" (caves) in the region of Alcobaca in western central Portugal. The author divides the "stations" explored into seven groups: 1. *Type of Lagoa do Cao*. With rude neolithic objects and pottery. Predominance of flints with thick triangular section. Flint spear-heads. Schist axes. Bear's teeth. No ornaments. 2. *Type of Pena da Velha*. Mouth of cave partly obstructed by large stones. Mortuary caves with human bones. Ornaments few, axes few, flint blades abundant. Teeth (*canis, felis*) bored for suspension. Remains of cow, stag, pig, rabbit. 3. *Type of Cabeça da Mestra*. Mouth of cave defended with stones rudely cemented. Rich in neolithic objects. Great variety of well and delicately made flint implements. Schist axes, adzes, etc. Many ornamental objects. Ornamented pottery. Flint implements, nuclei and refuse. Teeth (*felis, canis*) bored for suspension. 4. *Type of Ervideira*. Knowledge of panification and agriculture, grinding-mills of primitive type. Predominance of bone implements. Retouched flints rare. Pottery rude and unornamented. Simultaneity of hunting and fishing life. Imperfect axes. Flints rare. 5. *Type of Redondas*. Copper implements. Stone implements rare. Pottery abundant with variety of form. Schist plates bored for suspension. 6. *Type of Cabeça dos Mosqueiros (lower)*. Implements and instruments few. Pottery curiously worked with wheel. Copper implements. 7. *Type of Casa da Genia*. Implements of iron. Remains of large, thick pottery. Sculptures in bone. Of the fourth, sixth, and seventh types only one "station" each is known. In all 14 caves were investigated.—details of the finds in each, number of specimens, etc., are given. Pages 460-473 are occupied by an ethnographical sketch of Alcobaca based upon the results of these investigations. The seven crania obtained from these "stations" and the few long-bones indicate a small-statured but strong-muscled people, generally dolichocephalic. The type of axe represented in figure 236 (the author considers unique. One of the most curious objects discovered (at the Casa da Genia cave) is a rude bone carving, apparently of a woman (fig. 232). At Cabeça dos

Mosqueiros some glass beads (Roman?) were found.

Nerucci (G.) Maramao! (Arch. p. i. Stud. d. Trad. Pop., Palermo-Torino, 1901, XX, 273-274.) The author considers this much discussed word to be "simply a folk-exclamation." It has nothing to do with the proper name Maramaldo.

Norrbj (R.) När blev Sverges befolkning i egentlig mening bosatt? (Svenska Landmålln., Stockholm, 1901, XIX, No. 4, 1-22.) Treats of the first permanent settlement of Sweden as revealed by the terms for "village," "farmstead," etc. On page 22 the author gives his scheme of the development of these names. The contrast between the older names and the later, between the "flyttare" and the "bosaste,"—the somewhat nomadic and the permanently settled,—is brought out.

Öberg (S.) Från Härjedalen, asteckningar om folkliv ock folktrö. (Ibid., No. 3, 1-23.) Notes of Härjedal folk-life and folklore. Treats of timber-industry, old-time wedding-customs, etc.

Peixoto (R.) Uma iconographia popular em azulejos. (Portugalia, Porto, 1901, I, 385-504.) Treats, with 10 text-figures, of the pictures on tiles or pottery squares.

—Os cercos. (Ibid., 603-624.) In connection with Coelho's recent study of similar rites, the author argues that the *cercos*, a sort of beating the parish bounds at Easter, until lately in use in many parts of Portugal, are relics of, or substitutions for, heathen ceremonies concerned with the protection of the fields from evil spirits, noxious animals, etc. He agrees with Coelho in regarding the Rogation rites of the Christian church as an ecclesiastical substitution for the heathen ceremony.

Picão (J. da S.) Ethnographia do Alto Alentejo. (Ibid., 535-548.) This second section treats of the "montes," or isolated country habitations, which are one of the most notable characteristics of the trans-Tagan province. There are five classes of "montes." They are the residence-houses of large estates, and are like what are called in other provinces, *granja*, *casa*, *quinta*, etc. They consist of dwelling-houses, out-

Picco—Continued.

buildings of various sorts, and sometimes a chapel. From one point of view they are magazines of all that agriculture produces, a picturesque synthesis of Alentejan country-life (man, beast, bird, etc.). They are also free inns for travelers and beggars, permanent refectories for all sorts of needs, asylums of the old and sick, homes of abandoned children, and refuges of the persecuted. Details of the various buildings, etc., are given with 5 text-figures.

Picco (F.): *Bollea* (C.) *Spigolature dal "Libro de los ensiempos del Conte Lucanor et de Patronis"* di Juan Manuel, s. xiv. Saggio di traduzione corredata di alcune annotazioni comparative; (Arch. p. I. Stud. d. Trad. Pop., Palermo-Torino, 1901, xx, 219-244.) These "gleanings" consist of *exempla* 1-v from the book of *exempla* of Juan Manuel (fourteenth century), known as "*Libro de los ensiempos del Conte Lucanor et de Patronis*." The comparative notes are to be published in a subsequent issue.

Pirez (A. T.) *Amuletos*. (Portugalia, Porto, 1901, 1, 618-622.) A list of "pagan amulets" still in use among the people of Elvas and the reasons given for their employment by the populace today. Of the amulets in question 18 are for infants, 5 for lactation, 25 against diseases, dangers, etc. A brief description of each amulet is given.

Pitrè (G.) *Modi proverbiali e motti storici di Palermo*. Raccolti ed illustrati. (Arch. p. I. Stud. d. Trad. Pop., Palermo-Torino, 1901, xx, 387-408.) Historical and explanatory notes on 48 proverbial expressions and historical sayings from Palermo.

Pommerol (F.) *La fête des brandons et le dieu gaulois Grannus*. (Bull. et Mém. Soc. d'Anthr. de Paris, 1901, v^e 2., II, 427-431.) Brief account of the ceremony of the *Granno mio* on the first Sunday of Lent in the Auvergne—"torch Sunday." From a bonfire (around which the people dance) at night straw-torches are lit, which are then passed under the trees, etc., with appropriate exclamatory verses. The characteristic accompaniment of the ceremony is the cry "*Granno mio, Granno mon pouère, Granno mo moa-ète*" ("Grannus, my friend; Grannus,

my father; Grannus, my mother.") Dr Pommerol considers that this ceremony is what remains of an ancient solar germ-cult, and would identify *Granno* with the *Apollon Grannus* to whom altars have been found dedicated in England and Alsace,—a Gaulish deity. This name he would connect with certain Celtic words for "sun" (Irish *grían*, Welsh *grían*), from which he also suggests the much discussed French word *brillant* may have been derived.

von Preen (H.) *Opferung aus Thonkopfern in Haselbach bei Braunau am Inn und im Taubenbach*. (Mitth. d. anthrop. Ges. in Wien, 1901, xxxi, 52-61.) Brief account, with 30 text-figures, of the pilgrim-shrine (Church of St Valentine) in Haselbach, near Braunau on the Inn, and the clay-heads offered up there for votive purposes. Also a description of similar votive offerings at Taubenbach in lower Bavaria. The author concludes that "we have here, both in Haselbach and in Taubenbach, beyond a doubt, the continuation of an ancient cult, of which only the outward form has maintained itself until the present time."

Raccuglia (S.) *Proverbi e modi proverbiali riguardanti persone e paesi di Sicilia*. (Arch. p. I. Stud. d. Trad. Pop., Palermo-Torino, 1901, xx, 260-262.) Nos. 61-69 of proverbs, etc., concerning Sicilian personages and towns, with explanatory notes.

Rasari (E.) *Persone di cittadinanza italiana che parlano abitualmente in famiglia un idioma straniero, secondo i risultati del censimento generale della popolazione del 10 febbraio 1901*. (Atti d. Soc. Rom. di Antr., 1901 [1902], viii, 89-99.) Statistics of foreign-speaking population of Italy according to census of 1901, with discussion of data. The number of families and individuals (Italian citizens) habitually speaking a foreign language was in 1901 as follows: Provençal French 19,005 (80,200), German 2,308 (11,400), Slavonic 5,868 (30,000), Albanian 21,564 (90,000), Greek 7,408 (31,200), Catalan 2,055 (9,800). This makes a total of 58,208 families and 252,600 individuals, representing 178 communes. The mass of the French-Provençals are in Aosta, of the Slavs in Udine, of the Greeks in Lecce and Calabria. In Aosta the French-Provençal has preserved its im-

Rasari—Continued.

portance, but has diminished since 1861 in Pinerolo and Susa. There are two groups of Germans in Italy, the Piedmontese and the Venetian (relics of the 13 communes of Verona, etc.); the number of those speaking German in the Venetian region has decreased a half since the middle of the last century; the other German "island" seems to have increased. There are also two Slav-speaking groups, one in Friuli, the other in the Abruzzi; the former has decreased since 1851,—the one is Slovenian, the other Serbian. The increase from 55,453 in 1861 to 90,000 in 1901 of individuals speaking Albanian is due partly to natural increase and partly to the more careful census-taking of the past year. The same remarks apply to the population speaking Greek. The Catalan element, confined to the city of Alghero (and environs) in Sardinia, is descended from a colony arriving in 1354 A.D., which was favored during the long Spanish rule of the island. Counting transients at the date of the census the foreign-speaking population of Italy amounts to ca. 1 %.

Reinach (S.) La station néolithique de Jablanica, Serbie. (Anthropologie, Paris, 1901, XII, 527-533.) Brief account, with 15 text-figures (terra-cotta figurines, pottery, etc.) of the "purely neolithic" station of Jablanica in Serbia. This extensive archeological location was examined in September, 1900, by M. Vassits, now director of the new Museum at Belgrade. The most interesting specimens found are terra-cotta statuettes (more than 80 in number), dispersed in such a manner as to indicate that they belonged to the primitive household furniture of the cabins of these prehistoric people. While some of these figurines represent women and others animals (these are fewer and ruder), there appear to be none representing the male form. The finds in general indicate that the station of Jablanica "constitutes a new link in the chain uniting Bosnia to the Troad and Phrygia, on the one hand, and, on the other, to Hungary and southwestern Russia." Over all this great area in neolithic times there existed "the same primitive civilization characterized by statuettes and pottery of almost identical form and workmanship." Such secondary differences as are present may be attributed to the developments

of local industries, and there is no need for the hypothesis of a unique center of manufacture and diffusion. The ethnic relationship of the creators of this primitive culture is not very clear. They may have been the ancestors or predecessors of the Thraco-Illyrians.

— Un nécropole en Albanie. (Ibid., 662-670.) Brief account, with 22 text-figures, of the results of the investigations (in 1898) of M. Degrand at the necropolis of Komani, not far from Skutari, in Albania, with descriptions of some of the bronze and silver objects there found.

Rivière (E.) Les dessins gravés de la grotte de la Mouthe, Dordogne. (Bull. et Mém. Soc. d'Anthr. de Paris, 1901, V^e s., II, 509-517.) Brief description, with 8 figures (bison, cow, reindeer, goats, mammoth, horses), of the rock sculptures of the Grotte de la Mouthe, Dordogne. See *American Anthropologist*, 1902, IV, 164.

Rossi (P.) I cicli nelle "rumanze." (Arch. p. l. Stud. d. Trad. Pop., Palermo-Torino, 1901, XX, 165-184.) This article is extracted from the author's work *Le "rumanze" ed il folklore in Calabria*. According to Rossi, the *rumanze* is polycyclic. In these folk-tales there can be detected a Christian (naively ignorant and humorous), a Celtic (with fairies and goblins), a human (redolent of everyday life and activities), a semi-heroic (akin to the Arthurian), and possibly an Arabian (reflected from "The Thousand and One Nights") cycle. *Sui generis* are the *rumanze di Iugale*, in which appears the countryman half-fool, half-thief, deceived today, tomorrow the trickster himself. When the *rumanze* treats of Christian topics it is in a happy vein.

de Saint-Venant (M. J.) Dissemination des produits des ateliers des Grand-Pressigny aux temps préhistoriques. (Anthropologie, Paris, 1901, XII, 550-555.) According to the author, who has carefully studied the subject, the area of distribution of Pressinian flint implements, representing the primitive industry of southern Touraine, does not include all of ancient Gaul, and the distribution has taken place in three directions chiefly,—(1) by the Loire valley to Brittany, (2) northward toward the Channel and Belgium, (3) eastward into Switzerland. The rejects are known

de Saint Venant—*Continued.*

locally as *livres de guerre*. According to M. Rutot the flint deposits of Belgium furnish abundance of material identical with that of Grand-Pressigny.

Salomone-Marino (S.) *Le storie popolari in poesia siciliana messe a stampa dal sec. XV ai di nostri. Indice generale degli autori e delle cose notabili.* (Arch. p. l. Stud. d. Trad. Pop., Palermo-Torino, 1901, XX, 267-272.) General index of authors and subjects to the study of "Folktales in Sicilian Poetry since the Fifteenth Century," which has appeared in previous issues.

Sampaio (A.) *As "vilas" do Norte de Portugal.* (Portugalia, Porto, 1901, I, 549-554.) Continued from previous two numbers. This section (chapters ix-xii) of Sampaio's study of the "vilas" of northern Portugal treats of the classes of the *villa* population, permanence of the *villas*, Neo-Visigoths (seignours and farmers), transformation of the *villas* (petty proprietorship). Much interesting historical detail is given.

de Sanctis (S.) e Toscano (P.) *Le impronte digitali dei fanciulli normali, frenetici e sordomuti.* (Atti d. Soc. Rom. di Antr., 1901 [1902], viii, 62-79.) After a general introduction the authors give in detail the results of the investigation of the finger-prints of 103 boys between 6 and 14 years of age, of whom 40 were pupils in an elementary school in Rome, 40 feeble-minded children (none complete idiots) from an Asilo-Scuola for the poor, and 23 deaf-mutes from the Royal Institution in Rome, all more or less developed in intelligence. The chief conclusions arrived at are: The feeble-minded and the deaf-mutes tend to have a simple and uniform (*i. e.* repeated on all 10 fingers) design of finger-print, — simplicity of design is "the fundamental and typical anomaly and of certain degenerative significance." Anomalous forms abound in the feeble-minded and deaf-mutes, and both (the latter more than the former) present, in considerable proportion, the "uniform-anomalous type" (uniformity of design on all fingers and anomalous form of this design). The so-called "radial opening" occurs in all three groups exclusively on the index-fingers, the finger which is physiologically most evolved. The article is accompanied by 4 tables and 9 text-figures. In connection with this paper

should be read Vucetich's *Conferencia sobre el Sistema dactiloscópico* (La Plata, 1901).

Sanfilippo (F.) *Aneddoti intorno a Ferdinando III° Borbone, in Sicilia.* (Arch. p. l. Stud. d. Trad. Pop., Palermo-Torino, 1901, XX, 250-252.) Tells the story of "the pardon of the bacon" in Maroneo.

dos Santos Rocha (A.) *Mobiliário neolítico disperso no districto de Leiria.* (Portugalia, Porto, 1901, I, 591-592.) Brief account of a collection of neolithic implements from the district of Leiria, now in the Museum of Figueira.

— *Nota sobre um adorno metálico existente no Museu da Figueira.* (Ibid., 592-593.) Describes a bronze (?) crescent-shaped ornament (in the Figueira Museum) from Povoa.

— *Estação luso-romana da Pedralha.* (Ibid., 593-595.) Brief account of the finds, — remains of floors and dwellings, fragments of tiles, inscriptions in Latin, fragments of pottery, fibulae, buckles, etc., — at the Lusitanian-Roman "station" of Pedralha.

— *Dado romano proveniente das ruínas de Condeixa-a-Velha.* (Ibid., 595-596.) Treats of a Roman die for playing found in the ruins of Condeixa-a-Velha, with references to such discoveries elsewhere.

— *Necropole luso-romana da Senhora do Desterro, em Montemor-o-Velho.* (Ibid., 596-598.) Brief account of the Lusitanian-Roman necropolis of Senhora do Desterro. See Severo (R.)

Savignoni (L.) *Fragments of Cretan pithoi.* (Amer. J. Archaeol., Norwood, Mass., 1901, Sec. 2, v, 404-417.) Describes, with two plates (21 figures) and 2 text-figures, numerous fragments of pithoi from Haghiotis Ilias and Prinia. The author considers these finds "a fresh and noteworthy contribution to the history of Greek pottery modelled in relief."

Schukowits (H.) *Das Kellerrecht.* (Ibid., 452-455.) Gives the text of a "wine-cellar law" of 1614 A.D., from a MS. in the author's possession. This "law" had long been kept in the Kinsky cellars at Matzen in Marchfeld.

Schülte (O.) *Braunschweigische Abzählverse.* (Ztsch. d. Ver. f. Volks-

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kunde, Berlin, 1901, XI, 461.) Seven "counting-out" rhymes from Brunswick.

Severo (R.) & Cardoso (F.) Observações sobre os restos humanos da Necropole de Nossa Senhora do Desterro. (Portugalia, Porto, 1901, I, 598-599.) Gives measurements and descriptions of the fragments of two adult skulls, a femur, and a tibia from the Lusitanian-Roman necropolis of Nossa Senhora do Desterro. The approximate cephalic index of one of the skulls is 70.3, the stature estimated from the long-bones 1625 mm.

— A coleção archeologica de Albano Bellino, em Braga. (Ibid., 651-652.) Brief account of the Bellino archeological collection in Braga, due to private initiative.

Sütterlin (G.) Sagen aus dem Birseck. (Schweiz. Arch. f. Volkskunde, Zürich, 1901, V, 253-268.) German text of 26 tales from Birseck, of which a number relate to ghosts and other "supernatural" subjects.

Taramelli (A.) A visit to Phaestos. (Amer. J. Archaeol., Norwood, Mass., 1901, Sec. 2., V, 418-436.) Historical and archeological notes (with 2 text-figures) on Phaestos, once mistress of the central part of the island of Crete, and a maritime city, with account of recent finds there, including a great mass of pottery fragments of both the rough and finer kinds. The ornamental motifs, etc., are discussed. The author seeks to identify the Philistines with the Pelasgi, and the Pulasati of the Egyptians. Mt Ida, he thinks, was the center of the Pelasgic domination, and partly in possession of the Phaeacians, who may have been numbered among the corsairs of the Isles.

— A visit to the grotto of Camares on Mt Ida. (Ibid., 437-451.) Account, with 3 text-figures, of a visit in June, 1894, to the votive cavern, or Grotto of Camares, on the southern ridge of Mt Ida, "the religious center" of the extensive Phaeacian district of Crete, and of the explorations there made. The pottery remains are of particular interest and are "characteristic of the successive stages of culture evolved in the island."

Thieullen (A.) Os trabalhos à época de Chelles. (Bull. et Mém. Soc. d'Anth. de Paris, 1901, V^e s., II, 347-362.) In this paper, with 6 text-figures, the author argues that man of the Chellean epoch already fashioned bones for his use.

Thiot (L.) Station préhistorique de l'époque tardenoisienne à Warluis, Oise. (Ibid., 372-373.) Brief description of what is claimed to be the first find of Tardenois flints (small, geometrically formed) in the department of Oise.

Thomas (P. F.) Nota sobre um grande vaso de barro existente no Museu. (Portugalia, Porto, 1901, I, 602.) Brief description, with 1 text-figure, of a large clay vase from Alandroal in Alemtejo, dating from 1661.

— Amuletes do concelho da Figueira. (Ibid., 604-605.) General notes on the various kinds of amulets, and superstitions connected with them.

Tornæus (J.) Berättelse om Lapmarkerna och Deras Tillstånd. (Svenska Landsmälen, Stockholm, 1901, XVII, No. 3, 1-64.) A reprint of the famous account of Lapland and the Lapps by Johannus Tornæus, published for the first time in 1772, although finished in January, 1672. The author was a clergyman at Tornå. Among the topics discussed are: Origin of the Lapps, their name, religion, drums, Christianity, church-service, courting and marriage, physical and mental characteristics, clothing, reindeer, travels, hunting, fishing, bird-catching, food, trade, etc.

Traeger (P.) Ueber das Gewohnheitsrecht der Hochländer in Albanien. (Verh. d. Berl. Ges. f. Anth., 1901, 352-363.) Consists of an article (pages 353-358) on "Das Recht der Stämme von Dukadschin" by Pastor Laxar Mjedia, and one (pages 358-363) by Pastor Nikola Aschtsa on "Das Gewohnheitsrecht der Stämme Mi-Schkodrak (Ober-Scutariner Stämme) in den Gebirgen nördlich von Scutari," giving the essence of the customary laws of certain mountain tribes of Albania. Blood-revenge and murder, wounding, protection and guidance, appeasing of blood-revenge, robbery and theft, proof, injury to property of others, pledges, inheritance, purchase and sale, are among the rubrics considered. The Albanian population consists of the

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urban residents (under Turkish rule) with the lowland peasants dependent upon the towns, and the "highlanders" who have, more or less, their own laws as here described, and their own chiefs for seeing that they are carried out. Meetings of the whole tribe are held several times a year.

Venturi (S.) La settimana santa in Calabria. (Arch. p. l. Stud. d. Trad. Pop., Palermo-Torino, 1901, XX, 358-364.) Describes the ceremonies and festivities of Holy Week in the villages of Calabria. Holy Thursday is a day of flagellations of "I batteuti," as they are called, and imitations of all sorts of the Passion of Christ. On Holy Friday the scene changes and pleasures of the mind and the high suggestions of art are attended to. The drama of *La Pigiata*, a poem of the Passion, is recited. On Saturday the *Garrata* is performed, and on Easter Sunday the *Confronta*, in which is represented the happy and glorious meeting of Jesus with the Madonna.

Virchow (R.) Sur un dépôt des temps néolithiques, formé d'une coquille de *Tritonium* remplie d'éclats de silex taillés. (Anthropologie, Paris, 1901, XII, 565-567.) Brief account of the discovery, in September, 1898, of a *Tritonium* shell near Brunswick. See *American Anthropologist*, 1901, III, 186.

— Menschliche Schädel-Stücke und Beigaben. (Verh. d. Berl. Ges. f. Anthr., 1901, 364.) Brief note on fragment of crania and two dog's teeth and a piece of shell found in a limestone quarry at Walbeck, near Helmstedt. The remains are said to have been found 12m. below the surface. The teeth are those of a child of 5 to 6 years.

Viterbo (S.) Subsídios para a formação do refranço ou adagiário português. (Portugalia, Porto, 1901, I, 513-534.) In these contributions towards a collection of Portuguese proverbs, the author cites 548 proverbs from the works of Gil Vicente (Nos. 1-91), António Prestes (92-122), António Ribeiro Chindo (123-196), Lope de Vega (197-336), a song-book of the 16th century (337-463), a ms. of the 16th century belonging to the Monastery of Santa Cruz, Coimbra (364-547).—of these authorities the fourth and fifth are in Spanish.

A collection of *Adagios portugueses* was published by Antonio Delicado at Lisbon in 1631, which book the author uses as a *lusus* of comparison.

— As candeias na industria e nastradições populares Portuguez. (Ibid., 629-631.) Additions to article in previous number on lamps (*candeias*) in Portuguese popular industries and folklore.

Volkov (T.) Kourgau et travaux archéologiques près du bourg de Smiela. (Bull. et Mém. Soc. d'Anthr. de Paris, 1901, V^e s., II, 424-425.) Résumés briefly the work of Count Bobrinsky, the results of which have been published in 3 volumes (1887, 1894, 1901). The field covered is the southern parts of the governments of Kiev and Poltava. The following periods are recognized: 1. Stone age. 2. Eneolithic (VII-VI centuries B.C.—appearance of bronze at close of neolithic period). 3. Scytho-Sarmatian (VI-II centuries B.C.). 4. Period of Roman influence (II-III centuries A.D.). 5. Slavonic period (VI-IX centuries). 6. Byzantine influence,—period of Grand Dukes of Kiev (X-XII centuries). Flint implements are rare in the Stone age,—natural fragments, however, may have been used the Count thinks. In the Eneolithic period we meet with crached burials, and the use of red ochre. The *smelika* he considers the conventionalization of a flying bird.

— Antiquités de la région de Dnieper. (Ibid., 421-422.) Briefly resums the work of Mr and Mrs Khanenko on the archeology of the Dnieper region. The numerous remains treated of by these authors belong to the periods of Roman, Slavonic (I), Gothic, Sassanide, and central and eastern Asiatic influence. Among the relics noted is a bronze plate with a *Tur-N* of the Song dynasty (1128-1278 A.D.).

Vukasovic (V. V.) "Bagarilje" orvero "Nericae" presso gli Slavi meridionali. (Arch. p. l. Stud. d. Trad. Pop., Palermo-Torino, 1901, XX, 354-357.) Brief account of the *bagarilje*, or weeping women singers at funerals among the southern Slavs (Montenegrins). The texts of two "elegies" sung by such women are given,—of one both the Montenegrin and the Italian version.

Weichel (Dr.) Der Wall um Oberholz bei Thürm. (Verh. d. Berl. Ges. f. Anthr., 1901, 409-411.) Brief account, with plan, of the "Ringwall" in the Oberholz near Thürm, made doubtless for purposes of defence—a sort of "city of refuge" for the people of this region, dating back to pre-Slavonic times in Saxony.

Winkler (H.) Das Finnenhum der Magyaren. (Ztschr. f. Ethnol., Berlin, 1901, XXXIII, 157-171.) After briefly discussing the various theories as to the origin of the Magyars of Hungary, particularly Bálint's attempt (on linguistic grounds chiefly) to make them out to be Dravidians, Dr Winkler indicates the results of his very recent studies of the pure Magyar type of the Alföld region, which represents, he thinks, the pre-migrational Magyar stock. Elsewhere in Hungary the Magyars are a very mixed people—primitive Altaic, Huns, and Avars, "Turks," together with Slavs of all sorts, Roumanians, Italians, Tentons, have all contributed their share,—and can hardly be taken as the earliest type of the race. According to Dr Winkler, the investigation of the Alföld Magyars proves anthropologically and ethnologically even more than linguistically their relationship to the East-Finnic stock of Ural-Altaic peoples,—the Magyar proper is a rather pure Finn so far as type is concerned. Before their settlement in central Europe the Magyars were influenced by Turkic, Iranic, and Mongol peoples, for after their separation from their Finnish cognates, they wandered eastward as a "steppe-people," where these and other contacts took place. Dr Winkler thinks that Bálint's demonstration of Magyar-Dravidian relationship (the Magyars are *not* Dravidians) and certain Caucasian elements in the Magyar tongue are to be explained from the points of contact in pre-European days. Thus Turkic, Iranian, Mongol, Dravidian, and Caucasian elements exist in Magyar. Some of the questions here broached are to be further considered in Dr Winkler's forthcoming work, *Die uralaltaischen Sprachen*.

Zaborowski (M.) Portraits de la Vendée, des Deux-Sèvres, de la Vienne. (Bull. et Mém. Soc. d'Anthr. de Paris, 1901, 4^e s., II, 403-404.) Calls atten-

tion to the value for ethnography (head-dresses, etc.) of the portraits of women on illustrated postal cards. Many photographic collections of peasant types have also been made.

Zanardelli (T.) I nomi etnici nella toponomastica. (Atti d. Soc. Rom. di Antr., 1901 [1902], VIII, 100-113.) Discusses names of places and persons in Italy derived from ethnic appellations, directly or indirectly, popular and literary. *Italia* itself is such a name. The various modes of formation of such words are enumerated. Among the ethnic names whose derivatives in Italy are treated more or less at length are: Boii, Dani, Burgundi (Burgondiones), Suevi, Bulgari, Ungari, Baschi, Frisii (Frisiones, etc.), Germani, Sarmati, etc. The number of such names is very large. Names like *Africani*, *Germanici*, "richer spoils than the peoples themselves," traveled far from their home, when Roman conquerors took them with them. The etymology of some names is of interest as showing the difficulties of the study of such words. The Perginse Germans were nicknamed by their Italian neighbors *Milchani*, from their frequent use of the verb *milchen*. One can easily see, that, if they had made their appearance in remote times, these *Milchani* would have been an ethnic puzzle for later etymologists. There are many curious facts in this article.

Zemmrich (J.) Das deutsche Sprachgebiet in Süd und Ostböhmen. (Globus, Braunschweig, 1901, LXXX, 345-356.) A detailed historical-ethnographical account, with map, of the German language in southern and eastern Bohemia. The most remarkable section of German speech in this region is the "linguistic island" of Badweis, begun by Swabian immigrants in the 13th century. Interesting also is the "linguistic island" of Igau. This paper is a useful contribution to the literature of the Teuto-Slav linguistic conflict in central Europe. The author is moved by a strong patriotic spirit on behalf of the 180,000 Germans here considered.

AFRICA

Buschan (G.) Zur Pathologie der Neger. (Arch. p. l'Anthr., Firenze, 1901, XIX, 357-375.) Résumés data as to the comparative susceptibility to and

Buschan—*Continued.*

recovery from disease of the negro and the white. The author is of opinion that the negro has a special race relation in the matter of pathology, and that other races also have their own characteristics with respect to disease. The negro enjoys a greater or less immunity from malarial and yellow fever, abdominal typhus, erysipelas, scarlet fever, complications resulting from accidental wounds, trachoma, carcinoma, (less for sarcoma), varicocele, hypertrophy of prostate, bladder and gall stones, ovarian tumors, hare-lip, spina bifida, cleft palate, chorea, melanchoia, tabes, chronic delirium (Maggan). More than the white the negro suffers from tuberculosis, dermoid cysts, aneurism, tetanus, mania, dementia paralytica. The so-called "sleepy sickness" seems to be a specific neurosis of the African race. Before the entrance of the negro into the social life of the whites idiocy appears to have been (as in Africa) the form of nervous disease occurring, but now most of the forms known among the whites are found among the negroes as well. The author rejects the idea recently current that the immunity of the negro for malaria is not primary, but acquired through a slight infection in childhood. Pages 372-375 are occupied by a bibliography of 81 titles.

Etnografía Africana. (Arch. p. I. Stud. d. Trad. Pop., Palermo-Torino, 1901, XX, 409-411.) Brief account, with 2 text-figures, of certain specimens in the Ethnographic Museum of the Trocadero, Paris, the doors of the city of Abomey, fetiches, etc.

Fies (K.) Das Fetischdorf Avhagame und seine Bewohner auf dem Agoberge in Deutsch-Togo. (Globus, Brunschwig, 1901, LXXX, 377-384.) Somewhat detailed account, with 4 text-figures, of the fetish-village of Avhagame on Mt. Agu in the German Togo country,—the natives belong to the Erve stock, who permit both men and women to be shamans. The priests are law-givers and dictate the times of sowing and harvest. Their "pulpit" is a large rock. The author's visit took place in December, 1897. Lately this fetish-village has been losing in vogue and importance, with the increasing activity of the missionaries.

Flamand (G. B. M.) Les pierres écrites (Hadirat mektoubat) du nord de l'Afrique et spécialement de la région d'In-Salah. (Anthropologie, Paris, 1901, XII, 335-338.) Brief abstract, with discussion, of paper read at Congress of 1900. The stations at which exist *hadirat mektoubat* ("written stones"), or rock-engravings, in northern Africa, as reported by the author, number some 24, not including those of the north-east where 700 figures have been studied by him. The prehistoric (neolithic) rock-sculptures contain figures of animals some of which no longer exist in that part of the world, while the later or Libyan-Berber contain inscriptions in alphabetical characters and representations of animals living still in the country, or farther south.

Grogan (E. S.) Through Africa from the Cape to Cairo. (Ann. Rep. Smithsonian Inst., 1900, Wash., 1901, 431-448.) This paper, which is illustrated with 3 plates and a folding map, is reprinted from *The Geographical Journal* (London), for 1900. It contains some notes on the Waruanda, Pygmies, Balegga, Dinkas, Nuers, etc.

Gayot (Y.) Les indigènes de l'Afrique du sud. (Bull. et Mém. Soc. d'Anth. de Paris, 1901, V^e s., II, 362-368.) Brief general account based on *The Natives of South Africa*, published by the South African Committee (the investigation began in 1899). Between 1891 and 1896 the Bantu population has increased 35%, while the Bushmen and Hottentots have fallen off about 1.8%. In British South Africa there are nearly 4,000,000 blacks and other "colored" people. Of the Bantus it may be said "contact with peoples more advanced in evolution than themselves, far from being fatal to them, has actually increased their vigor and vitality." They are evidently destined to rise rapidly to a state of culture that will give them an important position in the future development of this part of the world. An interesting section of the South African world is formed by the 14,000 Malays imported from the East Indies, who have mixed with the other natives, but retain their creed of Islam. There are also many coolies from Hindustan.

— Les Vasilpans. (Ibid., 411-414.) The author translates from Kenna's *The Rast States* (London, 1900) two

Guyon—Continued.

passages relating to "the Vaalpens, the most degraded of all the peoples of South Africa."—the information is from Boer sources. Their habitat is the bend of the Limpopo and they are said to be physically, linguistically and culturally *sui generis*. Their own name is *Katla*. They are a species of dwarfs and "may be considered the aborigines of South Africa." But much more information is needed.

Hutter (D.) Westafrikanisches Stationsleben. (Globus, Brnchw., 1901, LXXX, 288-290.) Brief sketch of routine life at Baliburg in the North Cameroons.

Der westafrikanische Bantuneger, seine Charakteristik und Behandlung. (Ibid., 384-386.) Brief sketch of the character of the Bantu Negro of western Africa and the way to treat him. Among the bad qualities noted by Captain Hutter are idleness (lack also of idea of time and its value), ingratitude, greed, and the vices due to the development of his essentially commercial and speculative nature. On the good side may be reckoned good-naturedness, dependence, sense of humor, keen observation-gift, etc. In dealing with him seriousness (with play of humor), justice, impartiality, patience, veracity, personality are all needed and necessary for more or less complete success.

Laidlaw (G. E.) Some ethnological observations in South Africa. (Amer. Antiq., Chicago, 1902, XXIV, 77-84.) Notes on Zulus and Kaffirs made during service with the British army in 1900-1901. The Zulus "are mentally, morally and physically, the superior native people of South Africa." Their sexual morality and the virtue of their women are noteworthy. In many ways the Zulus are "the gentlemen of South Africa." To the "blanket Indian" of North America corresponds the "red Kaffir," who still lives the old, wild life to a large extent. Between the "red Kaffir" and the civilized, settled negro, there exists a semi-civilized class, who live by intermittent work for the whites. "Kitchen Dutch" (the language used when addressing negro servants and white people), the author says, with some libel of the Canadian-Français, "bears the same relation to high Dutch, that the French Canadian

'habitant patois' does to Parisian French." The 'rickshaw men of Durban are Zulus.

Olshausen (Dr.) Aegyptische hauburnenähnliche Thon-Gefässe. (Verh. d. Berl. Ges. f. Anth., 1901, 424-426.) The author calls attention to the resemblance between two clay vessels from ancient Egypt (figured in Petrie's *Diospolis parva*) and certain old Danish and German "hut urns." The Egyptian vessels are thought to be models of granaries,—and some of the German "hut urns" may have a similar origin. The Egyptian vessels in question belong to the first half of the second millennium B. C., much earlier than the earliest known Teutonic "hut urns." This brief article is illustrated with 3 text-figures.

Schweinfurth (G.) Ueber westafrikanische Figuren aus Talkschiefer. (Ibid., 330-331.) Brief account, with a text-figure, of some images in talc-schist from the Mendi country in the south of Sierra Leone, and another similar image from the island of Bulama (Bissau). The last represents rudely the female form. The Mendi images are said to be buried in fields as protection for crops, etc. The heads are hollowed out so that they may be filled with grain, seeds, etc.

Seidel (H.) Körperverunstaltungen im Süden Deutsch-Ostafrikas. (Globus, Brnchw., 1901, LXXX, 290-292.) Treats, with 2 text-figures, of bodily mutilations,—scar-tattooing, filing and knocking out of teeth, boring of lips, ears, nose, etc.,—among the Bantu tribes of the southern regions of German East Africa. Tattooing is in vogue for esthetic purposes and also for an interesting sexual reason in the case of women. With the huntsman it is for luck. The patterns preferred differ considerably with the various tribes. The *pelile* is more common with women. With the Wagogo the ear-ornament carried in the perforation serves as a sort of pocket for snuff and the like. The clay-ball head-dress of the Wakinga (figured on page 291) is remarkable. Mutilations for punishment are comparatively rare.

Sergi (G.) Crani arab. (Atti d. Soc. Rom. di Antr., 1901 [1902], VIII, 80-88.) Gives results of author's study of 29 Arab skulls in the Museum of the

Sergi—Continued.

Jardin des Plantes at Paris, made in August, 1900. Of these skulls (14 are male) some are from Algiers, others from Arabia. All except two (82.8, 89.4) are dolichocephalic and mesocephalic. The cranial capacity ranges from 1205 to 1595 cc. As to form 16 are "ellipsoid," 11 "ovoid," and 2 "sphenoid." The two brachycephalic skulls Sergi considers "foreign and Asiatic, with Mongolian characters, like those so common in the population of central Europe (Slavs, Teutons, Celts)." The average skull-capacity (1365.5) is not large and the skulls are heavier and not so well-formed as those of the Mediterranean race. The aspect of the face is dolicho-ellipsoidal.

Virchow (R.) Bildtafel aus ägyptischen Mumien. (Verh. d. Berl. Ges. f. Anthr., 1901, 259-265.) Brief account (from letters) of Th. Graf's recent studies of ancient Egyptian portrait-tablets and other ancient representations of busts and faces. There is a striking likeness between some of the old Egyptian portraits and those on coins of the Ptolemies. The paper is illustrated by 4 text-figures, 2 of which represent Cleopatra.

Weeks (J. H.) Stories and other notes from the Upper Congo. (Folk-Lore, Lond., 1901, XII, 459-464.) Stories III-V and "sundry notes" on name-giving, reincarnation, spirit-possession, etc.

Weitzacker (G.) La donna fra i Basuto. (Arch. p. l'Antrop., Firenze, 1901, XXXI, 459-478.) Brief account of the position and activities of woman among the Basuto, as an individual, in the family, in society, and in relation to religion. Birth, name-giving, puberty and initiation, clothing and ornament, are referred to, the ceremonies of the puberty-period being given with some detail. Old maids are very rare (polygamy is common). On pages 469-470 the author tells of a real love-romance of which he was himself a witness. The account of marriage is also rather detailed. The childless wife is in sad case (several cures for this are noted). To bear all boys is a sort of financial disgrace, since girls are a sort of feminine capital (there is a "cure" for this also). Besides prostitution, the careers of the prophet and the exercise of civil power (as chief even) are open to women.

According to the author the pagan Basuto woman manifests no more religiosity than the man, but after accepting Christianity sincerely "she shows herself capable of a delicacy of conscience and an elevation of feeling, which make her the worthy rival of her white coreligionists." The Basuto Christian churches contain two men for one woman. The author seems to think that the greater freedom of women under Christianity accounts for some of this.

Zaborowski (M.) De l'influence de l'ancienne civilisation égyptienne dans l'Afrique occidentale. (Bull. et Mém. Soc. d. Anthr. de Paris, 1901, v^e 2, II, 323-326.) Brief note and discussion—the paper has appeared in the *Revue de l'École d'Anthropologie* (see *American Anthropologist*, 1901, III, 782.) In the discussion MM. Verneau and Delisle seemed favorable to the idea of ancient Egyptian influence in West Africa.

ASIA

Adler (B.) Der nordasiatische Pfeil. Ein Beitrag zur Kenntnis der Anthropogeographie des asiatischen Nordens. (Int. Arch. f. Ethnogr., Leiden, 1901, XIV, suppl., 1-40.) In this valuable monograph, accompanied by 8 plates (ca. 300 figures) and a distribution-map, the author treats of the arrow among the peoples of northeastern Asia; General character, material, weight and size, notch, fastening of point, ornamentation, poison, forms of the point, position of the point with respect to the notch, feathering (coast form, Aino type, Bering Sea form, Siberian and South-Siberian or Kirghiz form), etc. The author agrees with Ratel and others in considering the arrow to be older than the bow, since it is a development from a weapon hurled from the hand (a throw-arrow). The northern arrow is a product of N. E. Asia and N. W. America,—quite possibly it originated with the Eskimo and was by them transferred to N. E. Asia. The Eskimo-arrow too recalls that of the European Stone age. As now extant the North-Asiatic arrow is somewhat degenerate. The Finnic peoples, by reason of their contact with the Slavs, have more or less given up their old weapons, while the Turkic group of the

Adler—*Continued.*

Mongolian stock have developed them farther (Yakuts, Mantchu, and Kirghiz especially). The migrations of the various peoples of northern Asia and their contact with tribes to the south have had some influence upon their arrows. The Aino, Adler regards as a people of southern origin and inclines to agree with Peschel's theory that they are "a Mongolian branch of the Negritos of the Philippines."

Aristov' (N.) *Etnicheskiya otnosheniya na Pamirye, etc.* (Russk. Antrop. Zhur., Moskva, 1901, II, No. 2, 33-61.) Continued from previous volume. This fourth chapter of the author's ethnographical study of the natives of Pamir according to ancient Chinese and other historical documents deals with Chinese documents of the period from the fifth to the eighth century,—the Annals of the Yuen-Wei and Tan Dynasties, and the accounts of Buddhist travelers to India (Fa-hsien in particular).

Belck (W.) *Mittheilungen über armenische Streitfragen.* (Verh. d. Berl. Ges. f. Anthr., 1901, 254-325.) Largely a reply to criticisms of Dr Lehmann regarding the cuneiform inscriptions at the source of the Tigris and other matters connected with the Armenian Expedition.

Delitzsch (F.) *Discoveries in Mesopotamia.* (Ann. Rep. Smithsonian Inst. 1900, Wash., 1901, 533-549.) This article, illustrated with 10 plates, is translated from the author's *Ex Oriente Lux* (Berlin, 1898).

Drummond (R. J.) *The rice-harvest in Ceylon.* (Folklore, Lond., 1901, XII, 457-458.) Brief account of an annual ceremony of the Tamil and the "rice-thrashing" of the Singhalese. The former is the expression of the belief that "after the rice is harvested, the 'god must be killed,' and a new god found like a new born baby come to life, and it must be found, or 'the great rain' will not come, and the sowing of rice will fail."

Fridolin (J.) *Burjäten und Kalmücken-schädel.* (Arch. f. Anthr., Breschw., 1901, XXVII, 303-316.) This article, which is illustrated with 14 plates containing 56 figures of crania, gives measurements and descriptions of 16 Buriat and 29 Kalmuck skulls from the collection of the Imperial Academy of

Sciences, St Petersburg. The Buriat male skulls have an average cephalic index of 83.6 (range 79.5-89.7), the Kalmuck male skulls 81.2 (range 73.1-86.8), female 82.9 (range 80.0-86.2). From this it appears that the Buriats are somewhat more brachycephalic than the Kalmucks. Among the most interesting specimens are 4 skulls of Buriat shamans and one of a Kalmuck prophetess, the peculiarities of which would be useful to Lombroso.

Gorostchenko (K.) *Soloty.* (Russ. Antrop. Zhur., Moskva, 1901, II, No. 2, 62-73.) A brief account of the Soyotes, the Ne-yang-hai of the Chinese, a Mongolian people of the Sojan-Altai region, usually classed with the Samoyeds, with anthropometric details of 72 male (15-74 years) and 20 female (20-71 years) subjects. The average stature of the men is 1597 (range 1494-1709) and of the women 1512 mm. (range 1425-1569). The average cephalic index of the men is 83.03 (range 76.03-92.13), of the women 82.57 (range 77.25-89.59). The author seems to think they approach in some respects the Turkic type.

von Hahn (C.) *Sitten und Gebräuche in Imeritien.* (Globus, Breschw., 1901, LXXX, 302-306.) Treats of wedding-customs, usages in sickness, death and burial, festivals, etc., superstitions, witchcraft, fortune-telling, among the Imers, a Georgian people of the Caucasus. According to Dr von Hahn "the Mongolian yoke has left its deepest impression in Imeritia upon the relations between husband and wife." Though the Christianity of the Imers dates from the 4th century, the superstitions and practices of the common people perpetuate a number of ancient heathen beliefs,—e. g., the placating of the *batonchi* ("Lord"), or invisible spirit of disease and sickness. The mountain of Tabakela, near Choni, is a regular "witch-hill." Water-sprites and wood-monsters also abound.

Huntington (E.) *Weitere Berichte über Forschungen in Armenien und Commagene.* (Ztschr. f. Ethnol., Berlin, 1901, XXXIII, 173-209.) An interesting account, well-illustrated with 35 text-figures, of the travels and investigations of Messrs Huntington and Knapp in Armenia, etc., during the fall of 1900 and the spring of 1901. Among the topics treated are: The

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Chaldean ruins and coneiform inscriptions at Baghin, the castles at Marzgerd (in pure Chaldean style), Murad-Zai, Pertag, Geiger, Harput, the inscription of Isoly, etc. In the east wall of the church at Baghin is a basaltic block with Chaldean inscriptions on both sides. The *burgun*-like mounds of Masgerd are noted. The building and use of the *kelek*, the primitive vessel of this region are illustrated on pages 184-185. Of peculiar interest and importance is the Chaldean castle in the Murad-Zai between Aehör and its mouth.—"a remarkable monument of military and architectural technique." The ancient Assyrians must have used the *kelek*, as the fishermen do today. A few notes on the Armenians and Kizil-bai are given, and on page 194 is a picture of one of the latter crossing the Euphrates on a *burgak*, or inflated skin, just as figured on the old inscriptions. Of the sculpture of the lions on the rocks near Dyak the author says the attitude and form recall those of Mycenæ. The double nomenclature and religious life of the young people of part of the region in question is very interesting.

Lehmann (C. F.) Ueber die chaldäische Inschrift auf dem Bingöl-dagh. (Verh. d. Berl. Ges. f. Anthr., 1901, 422-424.) Brief account of the Bingöl-dagh coneiform inscription, which, the author tells, is no "myth" as some have thought was the case. A brief list of new Chaldean inscriptions is added.

Mainov (I. I.) Dva tipa Tungusov. (Russk. Antr. Zhur., Moskva, 1901, II, No. 2, 1-16.) In this article, with 4 text-figures, the author treats of the two different physical types, the northern and the southern, present among the Tungus of northeastern Siberia. The northern type is described as small-statured, mesocephalic, with retreating forehead and chin, broad and short nose, and yellowish-white skin; the southern is medium-statured, sub-dolichocephalic, with prominent nose (straight or concave) and cheek-bones, and brownish-yellow skin. The usual measurements are given with some detail of tables, etc. The subjects numbered about 100. The range of stature of the men was 1486-1776, of the women (10 in number) 1457-1607 mm.

Maslorskii (S.) Gal'tcha. (Ibid., 17-32.) A general discussion of the Gal-

chas, a primitive Aryan people of Turkestan. The author seeks to distinguish among them five types: Arab, Jewish, Slavonic, Armenian, and Eastern Iranian. In the table of measurements are given the averages of 351 Tadzhiks of the plain, 47 of the East-Iranian (mountain) type, 46 of the Arab (mountain 29, plains, 17) type, and 13 of the Jewish type. The Jewish type of the plains seems to have the highest average stature (1780 mm. for 41 individuals), the Arab type of the plains the lowest (1637 for 17 individuals)—the 18 Afghans measured averaged 1638, and the author classes them with the Jewish type. The mountain Arab type is taller (1664 for 29 individuals) than that of the plains. The most brachycephalic is the mountain East-Iranian type (89.1 for 42 individuals), the least the Arab type of the plains (82.1). The author is of opinion that among the Galchas we have "isolated" the diverse elements which have combined to form the Tadzhiks of the Iranian-Turkestan region. On page 23 a brief comparative vocabulary is given.

Myrial (Alexandra) Les mantras aux Indes. (Bull. et Mém. Soc. d'Anthr. de Paris, 1901, V^e s., II, 404-411.) Brief account of the *mantras* or formulae recited, chanted, or sung in a set fashion in order to obtain certain physical or psychical effects. They may be used to make or stop rain, cause the wind to blow, cure or cause disease, make flocks prosper, cause springs to burst forth, charm animals, aid or prevent conception, obtain the favor of deities, in fact for almost anything, for their number is legion. They are used to produce all sorts of psychical effects as well,—to aid meditation. Often the sound alone is efficacious, all knowledge of the sense of the formula having long ago disappeared.

Schmidt (H.) Neuordnung der Schliemann-Sammlung. (Verh. d. Berl. Ges. f. Anthr., 1901, 255-259, 331-335.) A detailed account of the author's re-arrangement of the Schliemann collection now in the Museum für Völkerkunde, Berlin.

von Seidlitz (N.) N. W. Bogojawinskis Reise zu den Quellen des Amu-Darja. (Globus, Braunsch., 1901, LXXX, 323-324.) Résumé, from the account in *Souvenir d'Orient* (Moscow),

von Seidlitz—Continued

of Bogojawlenki's journey in 1898 to the source of the Amu-Darja in central Asia. The Tschayatal, Tadjiks, etc., are briefly referred to. On great festivals the Tadjiks present each other eggs colored red,—these the children roll, etc. The inhabitants of the banks of the Jachsan call themselves "Arabs."

Silnitch (J.) K' kraniologii Sojote. (Russk. Antrop. Zhur., Moskva, 1901, II, No. 2, 74-79.) Brief résumé, with 2 tables, of the craniology of the Soyotes (from 10 skulls). As to cephalic index 90% are brachycephalic and 10% sub-brachycephalic. The author considers that the Soyotes approach the Finnish type.

Sommier (S.) Note volant sur Karakal ed alcune misure di Abasi, Kabardini e Abaschi. (Arch. p. l'Antrop., Firenze, 1901, XXXI, 413-437.) In this article, with 14 text-figures, Dr Sommier gives the results of his visit in 1899 among the Karakal, Abasi, Kabardines, and Abaschi of the Caucasus. Anthropometric details of 21 Karakal men, 32 Swanetians (men 26), 23 Abasi men, 6 Kabardine men, and one Abaschi are included in this valuable paper. The hands were given special attention. The Karakal (some 20,000 in number) inhabit the western slope of Elbrus. They are Mohammedans, and their villages "reminded me specially of the *auls* of the Tatars of the Barabá steppe in Siberia." Many traces of Mongolian blood are indeed discernible. Others resemble the Georgian, others still the Semitic type. Their language belongs with that of the Nogai and the Adzhaidjan. Notes on domestic life, dress, industries, etc., follow. The average stature of the Karakal is 1675 mm., of the Swanetians (men 1695, women 1540), of the Abasi 1690, of the Kabardines 1,720. The cephalic index of the 23 Abasi was 85.5 (range 76.7-87.4), of the Kabardines 83.1, of 21 Karakal 84.44 (range 80.9-90.0).

Williams (F. W.) Chinese folklore and some western analogies. (Ann. Rep. Smithsonian Inst., 1900, Wash., 1901, 575-600.) After comparing the Chinese and Japanese accounts of creation the author cites analogies between the folklore of China and that of the Occident such as the story of Koi-si (cp. "Swan Maidens"), the feather-dress motif, the wife tested, the girl and the

dragon, the fairy islands of the East (cp. Hesperides, etc.), long sleeps (Rip van Winkle), "judgments of Solomon," name-sanctity, euphemisms, female demons (Lilith), demonology, witchcraft, soul-wanderings, etc.

Wu Ting Fang. Mutual helpfulness between China and the United States. (Ibid., 565-574.) General discussion. Reprinted from the *North American Review* for July, 1900.

Zaborowski (M.) Moulin à prière du Thibet, Coran de l'Afghanistan. (Bull. et Mém. Soc. d'Anth. de Paris, 1901, V^e s., II, 345-346.) Brief account of a Tibetan prayer-wheel and an Arabic Koran from Afghanistan presented to the Society by Mrs Warwick.

INDONESIA, AUSTRALASIA, POLYNESIA

Burton (A. E.) An eclipse expedition to Sumatra. (Technol. Rev., Boston, 1901, IV, 35-56.) Contains some notes on the Malays of the region, their houses, etc.

de Cacqueray de Lorme (M^{re}) Photographies et objets de la Nouvelle-Guinée anglaise. (Bull. et Mém. Soc. d'Anth. de Paris, 1901, V^e s., II, 393-398.) Brief note on the Papuans of New Guinea with subsequent discussion. The author expressed the opinion that "the Papuans are the result of a mixture of American Indians and negroes" (!).

Danneil (C.) Der Uebergang vom Flechten zum Weben nebst einem weiteren Beitrag zur Kenntnis der Weberei in Melanesien. (Int. Arch. f. Ethnogr., Leiden, 1901, XIV, 227-238.) Treats, with 1 plate, of the transition from plaiting to weaving with special reference to the art of weaving in Melanesia. Plaiting requires no special apparatus, but the first necessity of weaving is the formation of a warp by means of a tenter-frame. The primitive tenter-frame is not unlike a bow,—around this the warp is wound. This primitive apparatus comes from the Nissan or Sir Charles Hardy group in the "blackest" part of Melanesia. Dr Danneil calls attention to the fact that "all points in Melanesia from which weaving is known as yet, belong to the frontier regions of Melanesia towards the lighter colored peoples of the Pacific."

Ginfrida-Ruggeri (V.) Scheletro di Batacco di Sumatra. (Atti d. Soc. Rom. di Antr., 1901 [1902], viii, 55-61.) Description, details of measurement, etc., of the skeleton of a Battak from Sumatra, that of a young man, in good condition, now in the Museum of the University of Rome. The stature (calculated) is 1550 mm., cranial capacity 1563, index 82. The skulls of Battaks are rare in Europe,—this makes only the tenth (of these 4 are in the Strassburg Museum). In these 10 the cephalic index varies from 67.2 to 80.7, but 6 lie between 76 and 80.

Haddon (A. C.) A sketch of the ethnography of Sarawak. (Arch. p. l'Anthr., Firenze, 1901, XXI, 341-355.) Besides Chinese and Europeans (with their followers) the natives of Sarawak consist of the following groups: *Punan* (and other nomadic hunter tribes) in the interior; *Kalamantan* (numerous agricultural communities) found over a large portion of the district; *Kenyah-Kayan* (powerful and well-organized groups, whose ancestors are said to have migrated from Dutch Borneo several centuries ago), occupying the best tracts of land between the swampy low country and the mountains at the river-sources; *Iban*, or "Sea Dayak" (on the lower reaches of the rivers,—they are rapidly extending themselves); *Malay* (the true *Orang Melayu* in scattered places along the coast and a short distance up a few of the rivers,—the Malay traders, however, have penetrated farther). The *Punan* "are one of the most primitive and least advanced tribes in Borneo, but they are very gentle savages." *Pulo Kalamantan*, "the island of the Kalamantan," is one of the Malay names of Borneo. The *Kenyah-Kayan* are expert boatmen; they smelt iron, and make excellent sword blades and spear-heads. In language, decorative art, etc., the *Iban* differ considerably from the other groups, and, according to Hose, are related to the original Malays. The Malays of Sarawak have mixed a good deal with the coast peoples. On pages 344-347 are given the head-measurements of 274 natives of Sarawak, and on pages 349-351 the particulars of 80 crania of each of which the history is known. A table of statures is also given on page 351. The anthropometric and cranial data agree on the whole very well. The *Meloh* and

Sehop of the *Kalamantan* group are dolichocephalic, the *Melanau* brachycephalic. The general tendency of the *Kalamantan* is to be dolichocephalic, of the *Iban* to be brachycephalic, both with a long range. The *Kayan* and *Punans* are "distinctly mesocephalic and low brachycephalic," while the mixed group of the *Kenyah* "extends nearly along the whole scale." The *Punan* are of low stature (average 1555 mm.); rather taller than the *Kenyah* (1541) and rather shorter than the *Kayan* (1559). The average stature of the *Iban* is 1590 mm. The ethnological history of Sarawak begins with the nomadic, hunting savages of whom the *Punans*, *Ukita*, etc., are the modern representatives. About the same time, or somewhat later, came the *Kalamantan*, who mixed with the *Punan*, and again with the immigrant *Kenyah-Kayan*. Another invasion of brachycephals, from the west, came in the *Iban*, who were followed by the brachycephalic Malays. The other invasions of Borneo have not added new races. So far as Sarawak is concerned "the Hindu influence was almost entirely cultural." Of the presence of *Negritos* in Borneo no authoritative evidence is forthcoming. For the East Indian Archipelago in general Professor Haddon recognizes, apart from the *Negritos*, *Melanesians*, and later immigrants from the Asiatic mainland, the existence of "two races or distinct varieties of man,"—the *Indonesians* (dolichocephalic) and *proto-Malays* (brachycephalic). For a thousand years these in varying mixtures have been the real peoples of the islands.

Laville (A.) Vase canaque. (Bull. et Mém. Soc. d'Anthr. de Paris, 1901, v^e s., II, 402.) Brief account of an earthen vessel from the *Caket* tribe of New Caledonia. The "trats" of the vessel recall those of certain neolithic pottery. In French *canaque* is applied to the natives of New Caledonia.

Lissauer (A.) Ueber die Anthropologie der Anachoreten- und der Duke of York-Inseln. (Verh. d. Berl. Ges. f. Anthr., 1901, 367-389.) In this article, with a plates and a table of cranial measurements, the author describes in detail 9 skulls (male 5, female 4) of natives of the *Hermit* islands, near the Equator to the north of the *New Britain* group; also a deformed

Lissauer—Continued.

skull (index 85) from Mloko in the Duke of York group. Of the Hermit Islands skulls 6 are mesocephalic, 2 brachycephalic, and 1 dolichocephalic. Pages 367-371 are occupied with a general anthropological discussion of the subject, and pages 371-375 by an excursus on Sergi's taxonomic method of cranial investigation. Besides the 9 skulls here treated of in detail there are 6 others in the Luschau collection in the Museum für Völkerkunde, Berlin. Physically the Hermit Islanders differ in certain respects from the Papuans, while their language, according to Kubary, is akin to that of the natives of Samoa and the Carolines. The Papuan customs of boring the septum of the nose and slitting the ear (in women) occur among them. Out of the 15 skulls 14 are bored just above the orbit, probably for purposes of suspension, in accordance with the skull-cult so widespread in Melanesia. In the Hermit Islands the body is burnt, but the skull, with flowers in the eye-sockets, is hung up on a tree. Altogether these Islanders are Polynesian rather than Melanesian. Sergi's chief error, Dr. Lissauer thinks, is that he has taken individual variations for race-characters. Deformation of the skull is mentioned neither by Schellong nor Krause as practiced on the Duke of York Island, so the case here discussed seems new. This skull has also traces of having been painted red.

Mathews (R. H.) Organisation sociale des tribus aborigènes de l'Australie. (Bull. et Mém. Soc. d'Anth. de Paris, 1901, v^e s., II, 415-419.) Brief account of the social organization of the Yungmunni tribe of the Northern Territory of Australia. According to the author, "marriage, relationship, and the line of descent among the Australian tribes depends principally on the father."

Modigliani (E.) Piccolo contributo alla conoscenza dei canti popolari malesi. (Arch. p. l'Antrop., Firenze, 1901, XXXI, 361-401.) After a brief general introduction, chiefly concerned with the *pantoun* (pantom), the author gives a pantom-series (49 quatrains) obtained by him orally in Malaysia. The Malay text and Italian version are given, also specimens of the music (opposite page

388). These verses belong to the simple poetry of the people, and remind one of the performances of the Italian *improvisatori*, particularly the *stornelli* of the Tuscans. Some of the pantouns, in old Malay, are known all over the archipelago. The first *pantoun* published in Europe is to be found in Marsden's *History of Sumatra* (London, 1811) and is reproduced by the author. The authenticity of a pantoun cited by Ragusa-Moleti in his *Poesie dei popoli selvaggi* (Palermo, 1891) is shown by Modigliani who came across the Malay original. The words *gend*, "a half-breed Dutchman (Dutch father, Malay mother)," *babu*, "children of foreign Asiatics (particularly Chinese) born in Malaysia," *intrik*, "Malaysian descendants of Bengalese," are worth noting here.

Powys (A. O.) Data for the problem of evolution in man. Anthropological data from Australia. (Biometrika, London, 1901, 1, 30-49.) Treats, with 8 tables and 11 curves, of fertility of man and woman in relation to age, correlation between duration of life and number of offspring, stature of man between the ages of 15 and 85, alteration of stature with old age. In New South Wales there is a more rapid development of women, due, perhaps, to the warmer climate. The statistics seem to indicate that "for the Anglo-Saxon race the view of Kōrdai that the fertility is greater the younger the wife is not correct" (p. 34). Extreme longevity is not in all cases conducive to maximum reproductivity. The interesting fact is brought out here that "a new community like New South Wales, with plenty of food and occupation for all, is seen to resemble an old community like England in this relationship, and not a new community like America." As to stature the tendency is towards increased variability with old age. Man seems to reach his maximum stature at 28, woman at 25, and the age of maximum fertility approaches, if it does not coincide with the age of maximum stature.

Pulle (A. W.) Een Atjehsch wapen. (Int. Arch. f. Ethnogr., Leiden, 1901, XIV, 238-239.) Brief account, with 1 plate (3 figs.) of an Achinese dagger, upon which are inscriptions in Arabic letters, partly in Arabic and partly in Javanese.

Riedel (J. G. F.) Ueber die sogenannten Mongolen-Flecke der Kinder. (Verh. d. Berl. Ges. f. Anthr., 1901, 393.) Brief note recalling the fact that the author had seen the "Mongolian spots" in Celebes children and elsewhere in Indonesia; also in a Papuan girl.

Scharlau (B.) Beschreibung von 5 männlichen und 3 weiblichen Australierbecken. (Anat. Anz., Jena, 1901, XX, 380-385.) Brief description, with details of measurements of 8 pelves of Australians now in the Grassi Museum, Leipzig. They had been partly measured and studied by Frochowink in 1887. It is doubtful if all the pelves represent full-blood natives, since they come from a part of the N. E. coast, where intermixture with whites is known to have taken place. Of the pelves in question 3 are dolichopellic, 3 mesiopellic, and 2 platypellic. These 8 pelves (the author intends making a study of a series of 58 others) are hardly to be taken as a norm for the Australians.

Schulze (F.) Der Mensch in den Tropen. (Verh. d. Berl. Ges. f. Anthr., 1901, 394-400.) General discussion of the subject based upon 43 years' residence in the East Indies and many journeys through and through the Malay archipelago. The article was called forth by an essay by Dr J. Myleus in Vol. XX of *Vom Fels zum Meer*, with many of the statements in which Capt. Schulze finds himself in entire disagreement. Capt. Schulze takes a much more favorable view of the residence and labor of Europeans in the tropics, physically, mentally, and morally. The order of capacity for acclimatization in the Malay archipelago is: Germans, Portuguese, Spaniards, French, Italians, Dutch, and last of all, English,—they persist in being "too English" for one thing. European colonization in general and the acclimatization of Europeans in the tropics he considers very possible. More labor, he thinks, is performed by Europeans in the Indies than is generally believed. The chief requisites for health in the Indies are proper and sufficient food, rest after exertion, and a minimum of alcohol. It must be admitted, however, that the author's views are rather rosy.

The firewalk ceremony in Tahiti. (Folk-Lore, Lond., 1901, 311, 446-447.) Reprint (with plate from photograph)

of Professor Langley's account of Papa-Ita in *Nature* for Aug. 22, 1901; Andrew Lang's comments in the *Morning Post* for Sept. 21, and a résumé of Mr F. Davey's observations in the *Wide World* for June, 1901. The photograph is reproduced from the last and represents the exhibition given by Papa-Ita at Honolulu, January 19, 1901.

Yamasaki (N.) Ein Besuch in den Kopfjägerdörfern auf Formosa. (Mith. d. anthrop. Ges. in Wien, 1901, XXXI, 23-27.) Brief account, with 24 text-figures of which 14 reproduce native drawings, of a visit in December, 1896, among the tattooed head-hunters,—the Taiyal as they call themselves (the Seihan, or "raw barbarians" of the Chinese),—of the northern half of the central mountain-chain of Formosa. The village of Högö, its inhabitants, houses, skull-frames, tattooing, clothing, weaving, food, drawings, etc., are described. Pages 34-37 contain a German-Taiyal and a Taiyal-German vocabulary of some 325 words. The village of Paran was also visited. The friendliness shown by the Taiyal to the Japanese, the author thinks, may be due to the fact that the latter conquered the Chinese, the former's enemies. Twice a year (at least), at the spring marriage-festival and the autumnal harvest-festival, these people still go out on the hunt for human heads,—those of Chinese generally. The tattooing of the women is more highly developed than that of the men. The women use a simple weaving apparatus. The drawings which the natives made for the author are quite simple and like those of children,—those reproduced are chiefly of men and animals,—and they are, unintentionally, often comical.

AMERICA

Baelz (H.) Zur Frage von der Rassen-Verwandtschaft zwischen Mongolen und Indianern. (Verh. d. Berl. Ges. f. Anthr., 1901, 393-394.) Dr Baelz, who has recently been in British Columbia, reports as having found on two Indian children (a pure blood two years old and a half-breed eleven months) the "blue spots," but not so clearly marked as in Mongolian children. The author suggests that since the "Alpine race" (Celtic) of Europe has been suspected

Baels—Continued.

of Mongolian affinities the examination of foeti and infants for "blue spots" might be undertaken.

Buhle (H.) Das Deutchthum in Guatemala. (Globus, Brunschwg., 1901, LXXX, 281-284.) Brief account of the German element in Guatemala.

Dyke (C. B.) Theology versus thrift in the black belt. (Pop. Sci. Mo., N. Y., 1902, LX, 360-364.) Discussion of the results of an inquiry among 1200 negro children as to their desires for wealth and their reasons for them. The author concludes that "the negro's real menace to the South consists in the paucity of his earthly wants." To the negro children "wealth means only the satisfaction of the simplest and most legitimate wants."

Field work of the ethnological division of the American Museum of Natural History in 1901. (Science, N. Y., 1902, N. S., XV, 96-98.) Brief notes of the work of Swanton (Queen Charlotte Is.), Jochelson and Bogoras (northeastern Asia), the work of various other investigators represented in the various publications of the Museum, a list of which for the past year is given,—particularly in the northwestern U. S., British Columbia, etc.

Förstemann (E.) Der Nordpol bei Azteken und Mayas. (Verh. d. Berl. Ges. f. Anthrop., 1901, 274-277.) Discusses, with 5 text-figures, the hieroglyphic signs for "north" among the Aztecs and the Mayas, particularly the Aztec day-sign *nematl* and the Maya *chum*, the Maya God C., etc. The conventional sign for *nematl* has arisen from a monkey head, representing the "Little Bear" constellation.

Fuhse (F.) Amerikanische Museen. (Globus, Brunschwg., 1901, LXXX, 313-314.) Brief notes based on Dr A. B. Meyer's recent Report on the museums of eastern United States.

Guevara (T.) Historia de la civilizacion de Araucania. (An. de la Univ., Santiago de Chile, 1901, 377-427.) Treats of the social condition of the south at the end of the eighteenth century, with a map showing the distribution of the principal tribes in the eighteenth and nineteenth centuries. Notes on the chroniclers of the Araucanian wars, who are quite numerous, are included.

Also an account of the missionary labors of the Jesuits, Franciscans, etc. The Indians seemed to have believed that baptism caused the death of their children, and many other beliefs and obstacles made the missions ineffective during this period, and even till the present day, though, from the account of the prefect of the Castro missions in 1897, the Indian opposition is weakening. At Cholchol and Maquehua Protestant missions have been at work since 1897 with some success.

Hallock (C.) The ancestors of the American indigenes. (Amer. Antiq., Chicago, 1902, XXIV, 2-18.) The author argues in favor of a high antiquity of ancient American civilization and its close relations with the peoples of Egypt and Asia. Among other things, he believes that "the progenitors of the ancestors of the Mexicans were an Asiatic colony from Corea," that "the sun-dance of the plains Indians is a relic of the sun worship of Chichen-Itza and Peru," etc.

Hartman (C. V.) Etnografiska undersökningar öfver aztekerna i Salvador. (Vmer, Stockholm, 1901, XXI, 277-324.) This account of ethnographical researches among the Aztecs (Pipils, etc.) of the Republic of Salvador in Central America, is illustrated with 30 figures. People, houses and furniture, implements, industries, playthings of children, religious ceremonies, dances, and masks are treated of. The Aztecs of western Salvador number some 100,000. The seats figured on page 301 resemble some reported from Brazil by von den Steinen. A top from Nahuizaleco seems identical with one from Ancon (Peru). Basketry, which is considered in some detail (pp. 303-311), is a chief industry of these people. Four principal kinds of reed-baskets are made. Pages 314-322 are concerned with religious ceremonies, dances, and masks (a number of these are figured on pages 319 and 320). Nominally Catholics, the Aztecs of Salvador retain something of the old heathenism. The dramatic dance still survives among them, and other old heathen customs have attached themselves to the church processions, etc.

Lasch (R.) Die Verstümmelung der Zähne in Amerika und Bemerkungen zur Zahndeformierung im Allgemeinen. (Mitth. d. anthrop. Ges. in Wien, 1901,

Lasch—Continued.

xxx, 13-22.) Discusses, with numerous bibliographical references, the practice of deforming the teeth (knocking out, filing, coloring) among the American aborigines, in relation to the general subject. Dr Lasch concludes that knocking out teeth, filing teeth, and coloring teeth are all at bottom cosmetic practices, intended to attract the other sex. Vanity, not superstition, as so many have supposed, is the primitive stimulus here, as with other bodily mutilations, etc. Of coarse connection of teeth-deformation with rites and ceremonies is not excluded, but these (the puberty-practice, e. g.) come later. It is easy to see how coloring the teeth may be cosmetic in origin, but some of the other customs are not so readily explained.

Macclintock (S. S.) The Kentucky mountains and their feuds. (*Amer. J. Sociol.*, Chicago, 1901, vii, 1-28, 171-187.) Illustrated general account. Environment, food, houses, religion, clothing, marriage, language (it has "a Chaucerian smack"), feuds, etc., are briefly discussed.

MacCurdy (G. G.) The American Association for the Advancement of Science. Section H. Anthropology. (*Science*, N. Y., 1902, N. S., xv, 121-126.) Brief abstracts of papers read at the Chicago Meeting, Dec. 31, 1901, to Jan. 2, 1902.

— The teaching of anthropology in the United States. (*Ibid.*, 211-216.) From investigations made by the author it appears that "of the 31 universities and colleges offering anthropology, it is found to be an adjunct of sociology in 9, of philosophy in 5, of psychology in 3, of geology and zoology in 5, and of medicine in 1; while in 5 instances it stands practically alone, and in 3 it is unclassified." The reports of the various instructors are given. Dr MacCurdy sees reason to believe that anthropology will soon find a place in every institution of higher learning in the country.

— Twenty years of Section H., Anthropology. (*Ibid.*, 532-534.) Statistics, according to geography of subjects treated, of the papers read at the meetings of the Anthropological Section of the A. A. A. S. 1882-1901, compared with the papers of the British

Association (Section H) 1893-1896, French Association 1893-1896, German Anthropological Society, 1897-1900. The great preponderance in the American Association of papers treating American subjects only is noted, also the domination of archeological topics, with ethnological next. Out of a total of 559 papers read during the period 1887-1901 only 5.4% were devoted solely to foreign lands.

Mason (O. T.) Environment in relation to sex in human culture. (*Pop. Sci. Mo.*, N. Y., 1902, lx, 336-345.) After a brief discussion of the animal, vegetal, and mineral kingdoms and the forces of nature in relation to social and technical activities of the sexes, Professor Mason takes up in succession the various culture-areas of the New World: The birch-bark area (better for men than women), north Atlantic area (cultivation of maize by women and its results), Mississippi valley area (buffalo and prairie cultures), Muskogean area (a bi-sexual province), south Atlantic area (two sexes equally non-progressive, but well-fed), north Pacific area (canoe-culture province), Oregon-California area (woman the basket-maker), the Pueblo area (feminal life higher than the virile—religion and art largely feminal), Mexican area (art-forms, etc., virile), Colombian area (women farmers, potters, weavers), Peruvian area (the zenith of virile Amerindian art).

Peet (S. D.) Ethnic styles in architecture. (*Amer. Antiq.*, Chicago, 1902, xxiv, 19-34, 61-76.) Illustrated general discussion of different styles of architecture in use among the Amerinds of North America,—the Muskogees, Pueblos, Mexicans, Mayas in particular.

Preuss (T.) Parallelen zwischen den alten Mexikanern und den heutigen Huicholindianern. (*Globus*, Brunschwg., 1901, lxxx, 314-315.) Brief critical résumé of Seler's article in the *Mittheilungen der anthropologischen Gesellschaft in Wien*.

Seler (E.) Pinturas jeroglificas. Coleccion Chavero. (*Verh. d. Berl. Ges. f. Anthr.*, 1901, 306.) According to Dr Seler the two hieroglyphic paintings recently published by Chavero,—the *Mapa de Tlaxcalan* and the *Códice icolográfico*,—are fabrications by a clever young artist of Tabasco, who also

Seler—Continued.

palmed off one of his MSS. on the Dux de Loubat, and whose hand is also to be seen in the *Reliques de Chiapas*, published by the Mexican Junta Colombina. These fabrications are made up from figures in Kingsborough and in various Mexican and Maya MSS., the mixture often exhibiting crass ignorance of Central American paleography.

Slocum (C. E.) A plea for greater simplicity, and greater accuracy, in the writings of the future regarding the American aborigines. (*Amer. Antiq.*, Chicago, 1902, XXIV, 46-48.) The author argues in favor of the designation "aborigines" as both appropriate and expressive. "Indian," "American Race," "Red Race," and "Amerind" he objects to. The last expression he thinks "the most inexcusable of all, and likely to be confined to a few persons of the present generation." When he stigmatizes "Amerind" as a "bastard" term, Dr Slocum ought to have remembered how the once denounced "bastard" term *sociology* has found an abiding place in civilized tongues in the Old World and in the New. Denunciations of this sort will help on, rather than hinder, the use of *Amerind*.

von den Steinen (K.) Eine anthropomorphe Todten-Urne von Maracá. (*Verh. d. Berl. Ges. f. Anthr.*, 1901, 387-389.) Describes, with plate, a funeral urn from the caves of Maracá in the Amazonian region of Brazil, now in the Museum für Völkerkunde in Berlin,—another is in the Ethnographic Museum of Christiania, and both resemble urns figured by Hartt, which were found at Maracá by Penna in 1872. The covers of the urns make the faces. The Berlin urn is skeletal in some points, as well as anthropomorphic. Dr von den Steinen notes how seldom in America the cover of a vessel has been given independent form.

— Ueber die Guayaqui-Sammlung des Hrn. Dr. v. Weichmann. (*Ibid.*, 267-271.) Brief account of a collection of Guayaqui ethnological material (weapons, implements, ornaments, etc.) left behind in 1899 by a group of Guayaqui Indians of Paraguay in their flight from the white investigator and his companions. This collection is now in the Berlin Museum für Völkerkunde. Very interesting is the use the Guayaqui make of wax in smear-

ing their baskets for use as water-vessels and for improving the poor clay of which their pottery is made. The paper includes two brief vocabularies obtained from a boy who was abandoned by his people on their sudden departure. The presence of a considerable number of words coinciding with corresponding Guarani terms seems to indicate that the Guayaqui may after all belong to the Guarani linguistic stock.

Uhle (M.) Die deformirten Köpfe von peruanischen Mumien und die Uta-Krankheit. (*Ibid.*, 304-309.) The *Uta* disease seems to be of a venereal sort. The author argues that Peruvian skull-deformation has been largely intentional, citing from Spanish ecclesiastical and historical documents in proof of this view. Local and tribal differences in the matter of deformation seem to have prevailed (e. g., the Cabanas preferred a long, the Collaguas a broad, head). Among the Collaguas the head of infants was deformed to make the cap fit well. In the discussion, Professor Rudolf Virchow reiterated his opinion that the deformation of Peruvian skulls was intentional.

Virchow (R.) Die beiden Azteken. (*Ibid.*, 343-350.) Brief notes, with 2 figures from photographs of naked bodies, of the two microcephalic individuals Bartola and Maximo, known as "Aztecs." Dr Virchow notes the resemblance of their features to those on ancient Central America pottery and clay-images. The woman is much better developed physically than the man, and his legs and arms are much longer. Both are in good health. Their intellectual development can hardly be said to have made any progress in the last 35 years. Their feelings are given only feeble expression; deep emotions are foreign to them; their laughter has a mechanical character.

— Ueber den ausgeweldeten Kopf eines Jivaro. (*Ibid.*, 265.) Brief note on the dried head of a Jivaro Indian from the sources of the Amazon, on exhibition before the Society. Also reference to another head of a Guambia Indian belonging to Dr Virchow.

Willoughby (C. C.) Prehistoric hafted flint knives. (*Amer. Nat.*, Boston, 1902, XXXVI, 1-6.) Treats, with 4 text-illustrations, of the function of

Willoughby—*Continued.*

"the stone implements commonly called arrow and spear points," the majority of which, among the American Indians, "were used as knives or cutting tools and were attached to short handles of wood or antler." Hafted knives, etc., from ancient Mexico, the Ohio mounds,

the cliff-houses of the southwest, are briefly described. The cliff-house double-bladed knife, figured on page 4, is said to resemble a similar object "shown in the hand of a god issuing from the mouth of a serpent sculptured upon one of the lintels of a temple at Yarchilan, southern Mexico."

ANTHROPOLOGIC MISCELLANEA

Geographic Terms of Kootenay Origin.—Hardly any of the Indian tribes of northwestern America have passed away, or will pass away, without leaving in the geographic nomenclature of their habitat some evidence of their former existence. Mr Marcus Baker's paper, "Survey of the Northwestern Boundary of the United States, 1857-1861," which appears as Bulletin No. 174 of the U. S. Geological Survey (Washington, 1900), contains, among other things, a list of places, camp-sites, stations, etc., along the forty-ninth parallel in Washington, Idaho, and Montana, from the records in the survey reports,—the linguistic material seems to have been passed upon by the late George Gibbs. Of the names in question the following, in the opinion of the present writer, have been taken from the Kootenay language of northern Idaho and southeastern British Columbia:

1. *Acklew*. Name of a cache and creek near Kootenay river. This is evidently for *āqLū*, 'snow.'

2. *A-kam-i-na*, east fork of Kishenehn creek. A foot-note says, "*kam-i-na*, watershed." But the Lower Kootenay word *āqk' minā* signifies 'creek,' or 'small stream.' A stream in the southern part of the Kootenay district (B. C.) appears on the maps as Akamina, i. e., 'creek.'

3. *A-kin-īs-sahtl*, Flathead river. Perhaps intended for *āqkinis-góál*, the name of the *Carex scoparia*, one of the *Cyperaceæ* found in this region.

4. *A-kin-kwo-ndh-ki*, branch of Flathead river, heading with Tobacco river. This would seem to be *āqkink'on'ākē*, in which the first component may be *āqkink'ō*, 'forked stick on which pots are suspended over a camp-fire.'

5. *Akis-ka-klail*, crossing of stream south of Joseph's prairie. This is evidently a corruption of the Indian name of 'Joseph's prairie,' an open piece of country at Cranbrook, B. C., which was called after a former chief of the Kootenays known as Joseph. The proper form of the Kootenay word is *āqkiskā kLēl*, or *ā'qgīgā kLēl*, signifying, literally, 'twin prairies,' or 'two prairies together,' the chief components being *kis* (*gīs*), 'two together,' and *kLēl*, a radical-suffix 'prairie, extent of land,'—seen in *ā'qkinū kLēl*, 'prairie, meadow, plain.' A word of similar formation is *āqkisk'znāk* ('twin lakes'), the Kootenay name of the two lakes at the headwaters of Columbia river.

6. *Ak-kdph-kleh*, falls of Kootenay river, Flathead county, Montana. The proper form is *ā'qkōā'pēt*, 'waterfall, cataract.' The word seems to signify, also, 'water gushing forth from a spring.' It is likewise used in the form *ā'qhōā'pēt*.

7. *Ak-o-nā-ho*, creek tributary to Tobacco river. This seems to be the Upper Kootenay *ā'qkinōō'nūk*, 'creek, small stream,' the equivalent of the Lower Kootenay *āqkū'mina*. But the Indians call Tobacco river *ā'qkonō'ōō*.

8. *Ak-swak*, creek from south (Fisher creek?) at bend of the Kootenay.

9. *Ak-tlak-a*, creek above Kishenehn, tributary to Flathead river. Probably *aqktā'kā*, 'fish-spear.'

10. *A-kwote-kdtl-nam*, Chief mountain (or Waterton) lake, upper part across boundary. The Kootenay form would be *āqkōttkā'lnām*.

11. *Ar-ka-klune* (also *Acaclunah*), a creek in the Mooyie region.

12. *Chuk-kōse*, the Mooyie lakes in British Columbia. Perhaps a by-form of *teek'ā'nā*, 'small.' The Upper Kootenays generally call these lakes by the common English name Mooyie, or Mooyai. This word is derived from the French-Canadian *mouillé*, 'wet, rainy,' this being the rainy region of the country.

13. *Ka-cha-dtl*, Indian village, Acklew cache. This is evidently *kā tsāhāt*, 'my (*kā*) grass.'

14. *Kat-lah-wōke*, creek running to Flathead river through Boundary pass. Evidently *kālā'wōk*, or *kālā'wōk*, 'prairie-rose' (the *Rosa pisocarpa*), common in this region.

15. *Ka-yak-ka*, creek from south (Lake creek), tributary to Kootenay below the falls.

16. *Kin-nook-kleht-nān-na*, creek running east from divide of Rockies to Chief Mountain or Waterton lake. This is a decapitated form of *āqkinūktē'ēt nā'na*, 'little prairie, little meadow,' from *ā'qkinūktē'ēt*, 'prairie,' and *nā'na*, 'small, little.'

17. *Kish-ne-nā'na*, mountains in long. 114° 15'. The last component is perhaps *nā'na*, 'small.' But Kishenehn is given as the name of a camp, creek, and mountain in long. 114° 20'.

18. *Kit-lat-lā-nōok*, creek heading east of Mount Wilson and emptying into lower (Chief Mountain or Waterton) lake. Evidently a decapitated form of *āqktā'ālā'nūk*, 'a bend in a body of water (lake).'

19. *Shits-ōoh-nān-na*, small creek tributary to the Kootenay. The last component is *nā'na*, 'small.' The first is perhaps identical with *Shitsuish*, one of the names of the so-called Cœur d'Alène Indians of Idaho.

20. *Yah-kwoo-kah-kah*, the Chelemta cache; also called *Sweetskose*. The Kootenay form is *Yá'k'óká'hé*, by which name the Indians at present call Bonner's ferry (or Dick Fry's) in Idaho. *Sweetskose* is probably Kootenay also.

21. *Yahh*, station and river in Flathead county, Montana. The Kootenay name of the river is *Yá'k*, or *Yá'k'*.

22. *Yah-in-a-kahk* (also *Yokinakah*), creek and pass in Montana. This is identical with *Yá'kínóká'hé*, the Kootenay name of Dutch creek, one of the tributaries of Columbia river in the north of the Kootenay district.

23. *Yahs-koo-ndk-he*, first creek (Ramy creek) from north below the bend of the Kootenay.

24. *Yah-toók-i-na*, third creek (Quartz creek) from the northern tributary of the Kootenay below the bend.

ALEXANDER F. CHAMBERLAIN.

Cliff Dwellers' National Park.—On January 12th Representative Lacey introduced the following bill (No. 8323) in the national House of Representatives, which was referred to the Committee on the Public Lands and ordered to be printed:

"A BILL to set apart certain lands in the Territory of New Mexico as a public park, to be known as The Cliff Dwellers' National Park, for the purpose of preserving the prehistoric caves and ruins and other works and relics therein.

"*Be it enacted*, etc., that there is hereby reserved from settlement, entry, sale, or other disposal, and set apart as a public reservation, all those certain tracts, pieces, or parcels of land lying and being situate in the Territory of New Mexico, and within the boundaries particularly described as follows:

"Beginning at the northwest corner of the San Ildefonso pueblo-grant, in township twenty north, range seven east, New Mexico principal meridian, New Mexico; thence southerly along the western boundary of said grant to the northern boundary of the Ramon Vigil grant; thence westerly along the boundary of said grant to the northwest corner thereof; thence southeasterly along the boundary of said grant to the Rio Grande del Norte River; thence in a general southwesterly direction down the Rio Grande del Norte River along its right bank to its point of intersection with the township line between townships seventeen and eighteen north; thence westerly along said township line to its intersection with the range line between ranges four and five east; thence northerly along said range line to the southern boundary of the Baca location numbered one; thence easterly

along the boundary of said location to the southeast corner thereof; thence northerly along the eastern boundary of said location to the northeast corner thereof; thence in a northeasterly direction to the southwest corner of the Juan José Lobato grant; thence northeasterly along the southern boundary of said grant to its intersection with the section line between sections eighteen and nineteen, in township twenty-one north, range seven east; thence easterly along said section line to its intersection with the western boundary of the San Juan pueblo grant; thence southerly along the western boundary of said grant to its southwest corner; thence due south to the northern boundary of the Santa Clara pueblo grant; thence westerly along the boundary of said grant to the northwest corner thereof; thence southerly along the western boundary of said grant to its intersection with the northern boundary of the San Ildefonso pueblo grant; thence westerly along the boundary of said grant to the northwest corner thereof, the place of beginning.

"SEC. 2. That said public park shall be known as The Cliff Dwellers' National Park, and shall be under the exclusive control of the Secretary of the Interior, whose duty it shall be to prescribe such rules and regulations and establish such service as he may deem necessary for the care and management of the same. Such regulations shall provide specifically for the preservation from injury or spoliation of the caves, ruins, and other works and relics of prehistoric or primitive man within said park.

"SEC. 3. That the Secretary of the Interior be, and is hereby, authorized to permit examinations, excavations, and the gathering of objects of interest within said park by any person or persons whom he may deem properly qualified to conduct such examinations, excavations, or gatherings, subject to such rules and regulations as he may prescribe: *Provided, always*, That the examinations, excavations, and gatherings are undertaken for the benefit of some reputable museum, university, college, or other recognized scientific or educational institution, with a view to increasing the knowledge of such objects and aiding the general advancement of archaeological science.

"SEC. 4. That the Secretary of the Interior be, and is hereby, authorized, in the exercise of his discretion, to rent or lease, for terms not exceeding ten years, under rules and regulations to be made by him, pieces or parcels of ground within said park for the erection of such buildings as may be required for the accommodation of visitors.

"SEC. 5. That all funds arising from the privileges granted hereunder shall be covered into the Treasury of the United States as a special fund to be expended in the care of said park.

"SEC. 6. That in cases in which a tract covered by an unperfected bona fide claim or by a patent is included within the limits of this park the settler or owner thereof may, if he desires to do so, relinquish the tract to the Government and may select in lieu thereof a tract of vacant surveyed non-mineral public land open to settlement, not exceeding in area the tract covered by his claim or patent, and approximately of the same value, to be determined under such rules and regulations as the Secretary of the Interior shall prescribe; and no charge shall be made in such cases for making the entry of record or issuing the patent to cover the tract selected: *Provided further*, That in cases of unperfected claims the requirements of the laws respecting settlement, residence, improvements, and so forth, are complied with on the new claims.

"SEC. 7. That all persons who shall unlawfully intrude upon said park, or who shall, without permission, injure or destroy any of the caves, ruins, or other works or relics therein of prehistoric or primitive man, or who shall, without permission, appropriate any object of antiquity therein or commit unauthorized injury or waste, in any form whatever, upon the lands or other public property therein, or who shall violate any of the rules and regulations prescribed hereunder, shall, upon conviction, be fined in a sum not more than one thousand dollars, or be imprisoned for a period not more than twelve months, or shall suffer both fine and imprisonment, in the discretion of the court."

Proposed American Anthropologic Association.—During the Convocation Week of 1901-02, at Chicago, there were meetings of the Section of Anthropology of the American Association for the Advancement of Science, the American Folk-Lore Society, and several other organizations. In connection with these meetings there was, on December 31, a conference of committees on the needs of American anthropology, appointed by the Anthropological Society of Washington, the American Ethnological Society, and the Section of Anthropology of the A. A. A. S. The participants in the conference were Franz Boas, Stewart Culin, Roland B. Dixon, George A. Dorsey, Livingston Farrand, J. Walter Fewkes, George G. MacCurdy, W J McGee, Frank Russell, and Frederick Starr. Although little constructive action was taken at Chicago, the conference resulted in a general feeling that more definite coöperation among American anthropologists would be advantageous.

Subsequently several of the conferees engaged in correspondence pursuant to the deliberations in Chicago, which soon served to bring out and strengthen the feeling that some sort of organization was need-

ful; and in the course of a few weeks preliminary steps were taken toward the formation of an association of American anthropologists of national character. The most important action was the selection of a number of prospective founders of the proposed association, from whom expressions were invited. Most of the anthropologists so addressed have replied, and nearly all of these decidedly favor organization. Accordingly, arrangements have been made for a founding meeting, to be held at Pittsburg in connection with the meeting of the American Association for the Advancement of Science, in the audience room of Bellefield Church, on Monday, June 30, at 2 o'clock. Provisional arrangements are also under way for a scientific meeting of the new organization in connection with Section H (Anthropology) of the A. A. A. S. on Wednesday, July 2.

The most serious question brought out in the preliminary correspondence and conferences is, Shall the new association be strictly professional or of more general character? With the view of holding the settlement of this question in abeyance pending the completion of the organization, it was thought better by the Chicago conferees to limit invitations to the founding meeting to about forty of the leading anthropologists of the country.

The prospective founders, additional to the Chicago conferees, are: Frank Baker, D. P. Barrows, G. P. Bowditch, A. F. Chamberlain, Alice C. Fletcher, A. S. Gatschet, J. N. B. Hewitt, F. W. Hodge, W. H. Holmes, Walter Hough, A. E. Jenks, Aleš Hrdlička, A. L. Kroeber, Berthold Laufer, O. T. Mason, Washington Matthews, J. D. McGuire, M. L. Miller, James Mooney, C. B. Moore, E. S. Morse, W. W. Newell, C. L. Owen, J. W. Powell, F. W. Putnam, M. H. Saville, H. I. Smith, J. R. Swanton, Cyrus Thomas, E. S. Wood.

W J MCGEE

American International Archeological Commission. — The following recommendation has been approved by the delegates of the Republics represented at the Second International American Conference, recently held in the City of Mexico:

"The Second International American Conference recommends, to the Republics here represented, that an 'American International Archeological Commission' be formed, through the appointment, by the President of each of the American Republics, of one or more members of such Commission; that each Government represented shall defray the expenses of its Commissioner or Commissioners; that such Commissioners shall be appointed for five years, and that they shall be subject to reappointment; that appropriations for the expenses incident

to the prosecution of the work and publications of the report of the Archeological Commission shall be made by the respective Governments subscribing, on the same basis as that on which the Bureau of the American Republics is supported; that the first meeting for the organization of the Commission, the election of officers and adoption of rules shall occur in the City of Washington, District of Columbia, United States of America, within two years from this date; that the Accounting Department of the Commission shall be exercised by the Bureau of the American Republics; that this Commission shall meet at least once in each year; that the Commission shall have the power to appoint sub-commissions, which shall be charged specially with the explorations or other work committed to their care; that sub-commissions may be appointed which shall cause the cleaning [excavation] and preservation of the ruins of the principal prehistoric cities, establishing at each of them a museum to contain objects of interest found in the locality, and at such exhumed cities to establish conveniences for the visiting public; that the Commission endeavor to establish an 'American International Museum' which is to become the center of all the investigations and interpretations, and that it be established in the city selected by the majority of the Republics acquiescing in this recommendation.

"Committees shall also be appointed to clean [excavate] and conserve the ruins of ancient cities, establishing in each of them a museum to contain the antiquities that may be gathered, and which is to afford all possible accommodations to visitors.

"The Archeological Commission and the sub-committees it may appoint will be subject in all matters to the laws of the signatory countries.

"Made and signed in the City of Mexico, on the 29th day of the month of January, one thousand nine hundred and two, in three copies, in Spanish, English and French, respectively, which shall be deposited in the Department of Foreign Relations of the Government of the United States of Mexico, in order that certified copies thereof be made to be forwarded through diplomatic agency to each one of the signatory States."

Study of Aboriginal Languages.—Rev. Thomas Thompson was sent by the Society for the Propagation of the Gospel in Foreign Parts, to America, in the spring of 1745, and spent six years in Monmouth county and its vicinity in New Jersey. In November, 1751, he was sent on a mission to the coast of Guinea, Africa, where he remained until 1756. The naïve description of his method of learning the Fanti

(Ashanti) language, extracted from his *An Account of Two Missionary Voyages*, etc., London, 1758, will interest those who have made similar attempts to acquire aboriginal languages in this country :

" My Method in learning what I know of the *Fantee*, was by taking Pen and Paper to it : first asking the Names of Things, and then entering them down in Writing, which for the greater Certainty and Exactness, I demanded at different Times, and of several Persons. But such Teachers the Blacks are, that notwithstanding all this Care used on my Part, I found some Time after upon Revisal of my Papers, that I had collected only an Heap of Falsities. For instead of giving a Word by itself, they would either join with it a Pronoun, or an Epithet, or else a Particle, or give the Plural Number for the Singular, and sometimes join a Substantive and Verb together instead of speaking the one singly by itself. There is that Impetuosity in their Temper which makes them speak their Words very quick. Besides they utter themselves in a kind of melted Voice, which makes their Pronunciation more indistinct, and what renders it yet more puzzling, they will speak the same Word different Ways ; as for Example, to signify a Tree, they say *Idioeah*, and *Eduah*, and *Edioeah*. The Matter is, they know they should speak something like it, but having no Standard for the Propriety of the Language, the same Person shall pronounce the Word with these several Variations. This is a Specimen of the misery of learning Languages without either the help of Books, or the Instruction of a proper Master."

WILLIAM NELSON.

Casa Grande Ruin.—The Secretary of the Treasury has transmitted to Congress a communication from the Secretary of the Interior urging an appropriation of \$2200 for the repair of Casa Grande ruin, Arizona. In explanation of his request the Secretary of the Interior says : " Casa Grande Ruin, located near Florence, Ariz., is one of the noteworthy relics of a prehistoric age and people living within the limits of the United States. The land on which it is located is part of 480 acres reserved from settlement by Executive order dated June 22, 1892. At the date of discovery by one Padre Kino, in 1694, it was in a ruinous condition, and since that time has been a subject of record by explorers and historians. The structure is built of the material known as cajon ; that is, puddled clay molded into walls and dried in the sun, and of perishable character. This memorable ruin, the custodian, Mr H. C. Mayo, reports, is fast falling into decay ; that the walls, by reason of their age and the action of the elements, are rapidly crumbling, and that some action must be immediately taken to prevent the same from entirely disappearing. He recommends that a roof of asphalt or corrugated iron be placed over the structure, leaving an opening on the sides and overreaching the same, in order that the rain may be prevented from touching the sides ; that the walls of the ruin

be filled in with cement to prevent their further decay, and also that the ruins be inclosed by a high barbed-wire fence in order to exclude trespassers. These repairs he regards as necessary to the preservation of the ruin, and estimates that \$2,200 would be sufficient to cover the expense of same. I therefore recommend that the above sum be appropriated by Congress for the preservation of this remarkable ruin."

The Broca Lectures.—Since the foundation, in 1884, of the Broca Lectureship of the Société d'Anthropologie de Paris, the following lectures have been delivered: 1884, DALLY: Eulogy of Broca. 1885, Pozzi: Distinctive characters of the human brain. 1886, HAMY: Human races of the lower Nile valley. 1887, DUVAL (M.): Aphasia since Broca. 1888, LABORDE: Sensory-motor and olfactive nervous centers. 1889, HERVÉ: Alleged quadrumani. 1890, MANOUVRIER: Aptitudes and acts in their relations to anatomical constitution and external milieu. 1891, DARESTE: Experimental teratology. 1892, ZABOROWSKI: Disparity and future of human races. 1893, CAPITAN: The rôle of microbes in society. 1894, CHERVIN: The demographical position of France in Europe. 1895, VERNEAU: Negrillos and Ethiopians. 1897, DENIKER: Races and peoples of Europe. 1898, PAILLAULT: Some laws concerning the growth and beauty of the human face. 1899, RAYNAUD (G.): Nature of man in ancient America. 1900, ZABOROWSKI: China and the Chinese. 1901, YVES GUYOT: Characters of social evolution and regression. The range of these lectures is quite wide, but one notices the absence of the philological side of anthropology. Technology also seems to have been neglected. As one might expect, the emphasis has been upon the anatomical and physiological side of the science, as was the case with Broca himself.

A. F. CHAMBERLAIN.

Ambiantism.—In a communication to the Société d'Ethnographie, of which a brief abstract appears in the *Revue Scientifique* (4^e s., xvii, 409), M. Ch. Lemire discusses "ambiantisme." The term seems to be new in French, and the writer of this note suggests its adoption in English in the form *ambiantism*, since it is a brief word and signifies a good deal. By it is meant the phenomenon (and others allied) illustrated on a grand scale in Farther India (Indo-China), where political independence has been retained, while the whole social status has undergone, *e. g.*, a Chinese transformation. This is particularly marked among the Annamese, who have lost their own writing, adopted largely Chinese religion, education, etc., and who call the Chinese *Chu* ("elder brother"). "Ambiantism" is limited or complete. Yunnan, *e. g.*, has undergone "ambiantism" of language, writing, social forms, etc., but not of reli-

gion, the Mohammedans stoutly resisting the last. The Khmers, who have imposed their system of writing on some others of the Thai (Siamese) peoples, have resisted (the opposition has come chiefly from the women) attempts at reforming their language, religion, clothing, etc. British "ambiantism" is counting for not a little now in Siam; the language is being influenced somewhat. There are traces also of French "ambiantism" in Indo-China. Japan, while largely resisting "ambiantism" in language, religion, and partly in education, has taken on the material (economical, industrial, political) "ambiantism" of the modern western nations. "Ambiantism" is a peaceful process distinctly opposed to forcible reform or conquest.

A. F. CHAMBERLAIN.

Porto Rican Researches.—Dr J Walter Fewkes of the Bureau of American Ethnology has just returned to Washington after six weeks of field work in Porto Rico. The object of his visit to the island was a reconnoissance to determine the possibilities of future anthropological work there, and the results were highly successful. Although the aborigines of the island as a race have disappeared, pronounced Indian features were found among peons living in the more inaccessible regions of the island, especially in the mountainous districts of Loquillo, near Yunque, and in the neighborhood of Utuado and Ciales. The former region, the "home of the last cacique," offers a rich field for the study of primitive customs, folklore, legends, and arts, some of which are probably survivals of the prehistoric inhabitants of the island.

Dr Fewkes made studies and photographs of the palm-thatched houses at several localities on the coast and in the mountains, and found their construction identical with those of the aborigines of Hayti, as described by Oviedo in 1535. The level places surrounded by slabs of stone set on edge, were investigated and found to be dance plazas rather than "bull courts."

Some time was given to so-called shell-heaps on the northern coast and to the lagoons, ceremonial caves, sculptured stones, and pictography. A number of local collections of prehistoric objects, consisting of "stone collars," zemis, mortuary chairs, amulets, pottery, and stone implements, were studied and drawn or photographed. The most important specimens obtained were two "stone collars" which Dr Fewkes believes will shed much light on the use and significance of these problematical objects. A small collection of rare pamphlets on the history and archeology of Porto Rico by native writers was also made. A report on the material collected during the reconnoissance is in preparation, and it is hoped that a more extended account of the results obtained will be presented in the next issue of this journal.

Dr Gregorio Chil y Naranjo, whose death occurred at Las Palmas, Grand Canary, July 4, 1901, was an authority on the Canaries and their ancient inhabitants. A pupil of Broca and a physician, he was early led to take an interest in Canarian archeology, on which subject he contributed many articles to the *Congrès des Américanistes* and the *Museo Canario*. When, by the aid of Diego Ripoché, he succeeded in founding at Las Palmas the *Museo Canario*, for which the city furnished a building, he became its director, and remained so until shortly before his death. By will, half his fortune, together with a new building provided by him some few years ago, is given to the Museum, the other half being devoted to charities. He was a member of the *Société d'Anthropologie de Paris*, to whose museum he gave the collection of long-bones so often studied. According to Dr Verneau, who furnishes a brief account of Dr Chil y Naranjo's life and work to the *Bulletin et Mémoires* (v^e s., II, 446-447) of the Society, he was a man of great zeal and infinite good humor.

A. F. CHAMBERLAIN.

Ethnographical Survey of India.—"The Government of India has undertaken to conduct an Ethnographical Survey of India in connection with the census of 1901," says *Nature* (May 22). "This action was due to the initiative of the British Association at the Dover meeting in 1899. As Mr Risley, the author of 'The Tribes and Castes of Bengal,' has been appointed Director of Ethnography for India, we may feel sure that the Survey will be wisely planned, and we sincerely hope that sufficiently skilled workers are employed and that the usefulness of the Survey will not be impeded through lack of funds. While we are thankful for this official recognition of the claims of anthropology, it is still necessary to repeat, what has so often been urged in the pages of *Nature*, that there is an enormous mass of ethnological material in our Empire beyond the seas which is yearly decreasing at an alarming rate, or is rapidly becoming so modified as to lose its original value. The loss of this vanishing information is supinely permitted by our Government. What a contrast there is," concludes the article, "between the British Government and that of the United States is known only too well by those acquainted with the annual reports of the Bureau of Ethnology."

Bishop Thiel.—Dr Bernhard August Thiel, who died in Costa Rica, September 19, 1901, was born April 1, 1850, in Elberfeld, Prussia. When a young man he entered the order of Lazarists in Cologne, and after the expulsion of his order from Germany, finished his studies in Paris. After fulfilling his priestly duties for many years in Ecuador, he

was made Bishop of Costa Rica in 1880. This necessitated many protracted journeys which led often into unexplored regions, especially to parts that had not been visited by Europeans. Bishop Thiel's reports of these journeys, published in the *Anales del Instituto Físico-Geográfico de Costa Rica*, and his studies of the language of the native tribes, are necessary to an understanding of the ethnology and philology of this important field.

A Primitive "Baby-machine."—Dr W. L. Abbott observed a curious apparatus on Sigoeli river, in Simalur, western Sumatra, called *kilanga anak* ("baby machine"), used for the purpose of teaching infants to walk. A stout pole is pushed through the bamboo floor into the ground below, projecting upward some sixteen inches. On top of this is fitted a cap of bamboo; through the upper portion of the cap, at right angles, is inserted a short stick; the infant leans upon this horizontal pole and walks freely around on the floor. O. T. MASON.

Sumatra-Madagascar Acculturation.—Dr W. L. Abbott mentions rat-traps in Sumatra similar to those which he saw in Antanala, Madagascar, and supposes them to be the result of similar inventions arising from similar wants; but he also states that the blowpipes are the same in the two areas, and as the brown Polynesian race have been long firmly established in Madagascar, it looks more like a case of acculturation. O. T. MASON.

Jakun Elephant Trap.—The Jakuns are said by Dr W. L. Abbott to use a curious caltrop to maim elephants. It is made of the spikes of an old fish-spear inserted into a block of wood. The elephant steps on the barbed spikes and, not being able to draw them out of its foot, is securely captured. Maximilian mentions some such trap set for bears among the tribes of the Great Plains. O. T. MASON.

Simalur Classification.—In Simalur, west coast of Sumatra, according to Dr W. L. Abbott, there are four languages and races—(1) the original Island people who speak several dialects; (2) settlers from Nias, principally from Sigoeli river; (3) Atchinese from the mainland; (4) a very few Malays from the Pedang district. Everyone speaks more or less Malay. O. T. MASON.

American Museums.—In alluding to the account of the progress in anthropology at the Field Columbian Museum, by Dr George A. Dorsey, published in Vol. III of this journal, *Nature*, of London, in its issue of March 20 last says: "Thanks to an energetic and efficient staff and the enlightened liberality of Chicago merchants, the museum is fast

assuming a place in the front rank of the great anthropological museums of the world. This record by Dr Dorsey is enough to make us feel ashamed of ourselves in this country, as it is only a sample of what is being done in other American museums and institutions."

Australian Ethnology.—After an absence of more than a year, the greater part of which was spent among the aborigines of the northern interior of Australia, Prof. Baldwin Spencer and Mr E. J. Gillen returned to Melbourne on March 17. The explorers have brought back a considerable quantity of material, including phonograph and kinematograph records, on which to base an extensive work on the customs, myths, etc., of the various tribes studied.

DR ALEXANDER F. CHAMBERLAIN, assistant professor of anthropology at Clark University, editor of the *Journal of American Folk-Lore*, and member of the editorial board of the *American Anthropologist*, has been made a corresponding member of the Instituto de Coimbra (Coimbra, Portugal), "in recognition of his scientific and literary contributions."

MÉLUSINE.—With the issue for December, 1901, *Mélusine*, the Parisian folklore journal, has suspended publication, for a time at least. The increasing age of the chief editor and founder, Henri Gaidoz, and the illness of his collaborator, E. Rolland, are assigned as the cause for this regrettable event.

ARCHIVIO PER L'ANTROPOLOGIA.—The volume for 1901 of this anthropological journal, just issued at Florence, is a memorial volume dedicated to the thirty years' work of the Italian Anthropological Society.

ARCHIV FÜR ANTHROPOLOGIE.—The recently issued number of the *Archiv für Anthropologie*, Braunschweig, is dedicated to Prof. Rudolf Virchow, in memory of his eightieth birthday and continued scientific activity.

THE LAST NUMBER of *L'Anthropologie* contains an extended account of the life and work of the late Dr Charles Jean Marie Letourneau, sometime president and later general secretary of the Société d'Anthropologie of Paris.

PROF. E. B. TYLOR has resigned the office of keeper of the University Museum, Oxford, but will continue to hold the readership in anthropology, to which he was appointed in 1884.

PROCEEDINGS OF THE AMERICAN ETHNOLOGICAL
SOCIETY FOR 1901

January 28, 1901

A meeting of the American Ethnological Society was held at 12 West 31st street in connection with the New York Academy of Sciences. The program was as follows: A. Hrdlička, RACIAL CHARACTERISTICS OF THE BASE OF THE CRANIUM. Livingston Farrand, THE ALSEA INDIANS OF OREGON.¹

Dr Hrdlička's paper dealt with the middle lacerated foramen, the petrous portions of the temporal bones, and the styloid. The author demonstrated the different stages of development of these parts in primates and at different stages of life in the whites, and the differences of those parts, fully developed, in negroes, Indians, and whites. In adult whites the average middle lacerated foramen is large, the petrous portions appear considerably sunken (bulging of surrounding parts), the styloid is well developed. In the Indian the foramen is of moderate size, in the negro small, in apes absent; the petrous portions are less sunken in the Indian than in the white, on, or almost on, the level with the surrounding parts in the negro, bulging more or less beyond these in the primates; the styloid is in the majority of cases small in the negro and small to rudimentary in most of the Indians. Where the styloid is rudimentary, the vaginal process often plays a compensatory part. In whites all the mentioned stages of the parts described may be observed at different periods of life. Brain development accounts for the differences in the size of the middle lacerated foramen and the relative position of the petrous portions.

Dr Farrand reported observations made during the summer of 1900 on the language, customs, and traditions of the Alsea, a little-known and rapidly disappearing tribe of Oregon.

Meeting adjourned.

LIVINGSTON FARRAND, *Recording Secretary.*

March 25, 1901

A meeting of the American Ethnological Society was held at 12 West 31st street in connection with the New York Academy of Sciences.

¹ Papers thus marked have been published in the *American Anthropologist*.

Prof. F. H. Giddings read a paper on the *USE OF THE TERM "RACE" IN ANTHROPOLOGY AND SOCIOLOGY*. The term "race," as used by many different groups of investigators,—anthropologists, ethnologists, philologists, and historians,—long since ceased to have a definite meaning. Efforts to establish a technical and conventional use of the word have thus far been unsuccessful. As one more attempt I suggest a combination of the word "race" with various descriptive adjectives denoting successive degrees of kinship. The narrowest degree of kinship is Consanguinity, or the relationship (physiological, psychological, and sociological) of father and mother and children, brothers and sisters, grandparents and grandchildren, uncles, aunts, and cousins. Let us designate this degree of kinship by K_1 . The next degree of kinship, or K_2 , is Propinquity. The primary meaning of this word is "nearness in place," and a secondary meaning is "nearness in blood." The word is thus perfectly descriptive of a state of facts which we find when a number of families live in the same neighborhood and, through intermarriage and association, become related (but less closely than the consanguini of K_1) in blood, in type of mind, and in institutions. K_3 is Nationality, that wide degree of kinship (physical, mental, and social) which includes those who speak the same language and for many generations have dwelt together under the same political organization. K_4 is Potential Nationality, or the degree of relationship (physical, mental, and social) of a heterogeneous people composed of many nationalities undergoing assimilation, or blending, into a new nationality, as in the United States. Potential Nationality includes the familiar census divisions, "native born of native parents," "native born of foreign parents," and "foreign born." K_5 is Ethnic Race, a group of closely related nationalities, speaking closely related languages, and having well-marked psychological characteristics in common. Examples are: the Celtic ethnic race, including the Welsh, the Irish, the Highland Scotch, some of the Cornish, and the Bretons; the Teutonic ethnic race, including Germans, Swedes, Norwegians, Danes, and Dutch; and the Latin ethnic race, including Italians, Spaniards, and Greeks. K_6 is Glottic race. This is that very broad relationship, to a slight extent physical, to a somewhat greater extent mental and social, of those related ethnic races that speak languages derived from a common ancient tongue. Examples are: the Aryan Glottic race, including the Celtic, Teutonic, Latin, and other ethnic races; the Semitic Glottic race, and the Hamitic Glottic race. K_7 is Chromatic race, that extremely wide and vague relationship which includes related Glottic races marked by the same color. Examples are: the White Chromatic race, which in-

cludes the Aryan, Semitic, and Hamitic Glottic races; the Yellow Chromatic race, which includes the various Glottic races known as Mongolian or Turanian; the Brown, the Red, and the Black Chromatic races. K_2 is Cephalic race, or that widest relationship, which includes Chromatic races of like cephalic index. The distinction about which I feel most doubt is this between Chromatic and Cephalic race. Remembering that, according to this scheme, variability and multiplicity of specific characteristics produced by differentiation should increase as we proceed backward from K_2 to K_1 , I think that probably cephalic index is rightly placed as K_2 and color as K_1 , because, in the organic world in general, coloring seems to be a less stable characteristic than anatomical structure. The compound terms which I have here introduced are admittedly clumsy, but they have the advantage of conveying precise meanings. If a writer speaks of "race" without a qualifying word, his reader must guess at his meaning. If he says "Cephalic race," "Chromatic race," "Glottic race," the meaning cannot be mistaken.

In reply to a question, Professor Giddings said that the clan is developed between K_1 and K_2 and the tribe between K_2 and K_3 .

Mr Stansbury Hagar followed with a paper on THE WARDS OF CUZCO. Encircling the outskirts of the Inca capital of Cuzco are twelve wards, the origin of which tradition assigns to times anterior to the foundation of the Inca empire. The evidence seems to show that these wards were the terrestrial representatives of the signs of the Peruvian zodiac. This evidence is founded, first, on the general nature of Peruvian symbolism, especially the system of the *mamas* under which every material object on earth is supposed to be merely the expression to the senses of the inner and real archetype of that object which exists in the sky. As the power of the sun over all earthly life was noted by the Peruvians, they attributed to its *mama* by analogy, the same power over its celestial associates. Having divided the stars into constellations founded upon some real or apparent resemblance to some earthly object, they believed that the approach of the sun to each constellation strengthened the influence of the *mama* which governed that particular group. It followed that in order to increase the influence of that *mama* on earth to the greatest possible extent it was necessary to imitate its characteristics as accurately as possible. In this manner arose the ritual of the twelve monthly festivals. The correspondence between the ideas associated with these festivals and the Cuzco wards forms another important division of the evidence which tends to show their identity with the zodiacal signs. Then there is the

stellar chart drawn by Salcamayhua, a native Aymara, about the year 1615. The writer has already presented a summary of the evidence which identifies the stellar groups on this chart with the Peruvian zodiacal signs before the Congrès des Américanistes, Paris, 1900. The names assigned to the signs on this chart are found in all cases to correspond closely with the names of the wards. The fourth type of evidence bearing on the nature of the wards is found in the identity of several of their names with known constellations of the zodiac, and there is other internal evidence to the same effect. Four quite independent lines of research lead, therefore, to the same conclusion. The importance of this identification of the wards with the zodiacal signs lies partly in the indication it gives of the attainment by the Peruvians of an astronomical knowledge of high grade in ancient times, partly in its bearing on the question of the transmittal of ideas from continent to continent as against the idea of independent origins. The concepts associated with this symbolic astronomy of Peru pervade the customs, institutions, and laws of the country. They form the groundwork of the whole Peruvian polity and philosophy. It is therefore impossible that these ideas could have been introduced from Europe or elsewhere in modern times. Nevertheless, the correspondence between these and similar concepts found amongst other races in ancient times, is sometimes sufficiently striking to arrest attention and invite study. In no other country known to us, excepting possibly ancient China, has astronomical symbolism played such an important part in the development of the people.

Meeting adjourned.

LIVINGSTON FARRAND, *Recording Secretary.*

April 30, 1901

A public meeting of the Society was held at 12 West 31st street, with Gen. James Grant Wilson in the chair. The speaker of the evening was Rev. Dr John P. Peters, who gave an illustrated account of early Babylonian civilization, based on excavations at Nippur carried on by the speaker under the auspices of the University of Pennsylvania. After a vote of thanks to Dr Peters the meeting adjourned.

LIVINGSTON FARRAND, *Recording Secretary.*

October 28, 1901

A meeting of the American Ethnological Society was held at 108 West 55th street, in connection with the New York Academy of Sciences.

Prof. J. McK. Cattell made a brief report regarding psychology at the Denver meeting of the A. A. A. S.; Prof. G. G. MacCurdy, of Yale University, reported on anthropology at that meeting, and in addition described the explorations that are being carried on in the Mesa Verde region of southwestern Colorado by the Colorado Cliff Dwellings Association.

Prof. Franz Boas described the facilities for anthropological study in Berlin, as observed by him during a recent visit. Within the last twenty or thirty years the anthropological equipment of Berlin has progressed enormously. The museum now contains better East Indian collections than can be found in England; and it is strong in nearly all departments, notably so in American and especially South and Central American, anthropology. Fifty scientific workers are engaged on these collections, and sixteen of these are at work on American subjects. Besides the museum, there are several other institutions in Berlin, such as the Anatomical Institute of Waldeyer and the Pathological Institute of Virchow, in which anthropological work is done. The leader of German anthropology is Virchow. He disbelieves in the study of the variation of the whole body, and insists that only the study of the variation in the individual cells of the body can lead to fruitful results.

Reports of summer field-work were presented by H. H. St. Clair, on his work in Wyoming and Oregon, and by William Jones, on his work in Iowa and Oklahoma. The work of Mr Jones was carried on among the Sauks and Foxes, a people of Algonquian stock. One band of this people is located in central Iowa, and another in Oklahoma. Both bands practise similar customs, live in much the same way, wear the same kind of dress, show similar physical types, and, with the exception of certain differences in idiom, and with the exception that the Iowa band have a slower, more deliberate pronunciation, they speak the same tongue. The Iowa band is the more conservative, and among them the law of the clans still holds. The education of the children is accomplished not by instruction but by imitation. The older boys imitate the men, and the younger boys imitate the older ones; and, similarly the girls the women. The life of the children is but a smaller edition of the life of the older people.

Meeting adjourned.

LIVINGSTON FARRAND, *Recording Secretary.*

November 20, 1901

A regular meeting of the Society was held at the American Museum of Natural History, with Gen. James Grant Wilson in the chair.

Mr William Jones exhibited an ethnological collection from the Sauk and Fox Indians made during the preceding summer, and spoke of the cultural relations of that tribe.

Prof. Franz Boas read a paper on the HORIZONTAL PLANE OF THE SKULL. In comparing different skulls of a series it is necessary to decide upon a plane according to which all the skulls must be adjusted. The two planes which are most extensively used for this purpose are the French plane, passing through the lower surface of the condyles and the alveolar point; and the German plane, which is defined by the lower rim of the orbits and the upper rim of the outer ear. Both these planes are entirely arbitrary. A few points on the skull are selected, and are placed in a homologous position. It is evident that it would be better to place the skulls in such a way that as many anatomical points as possible would coincide as nearly as possible. The mathematical treatment of this problem shows that in order to accomplish this result the skulls must be so placed that their geometrical centers of gravity coincide. Furthermore, if an average type of the skull is constructed from all the average measurements and angles, it is possible to find the correct adjustment of every single skull in relation to this average skull.

Meeting adjourned.

LIVINGSTON FARRAND, *Recording Secretary*.

December 11, 1901

A public meeting of the Society was held at 12 West 31st street, with Gen. James Grant Wilson in the chair. Dr George T. Stevens, Dr James Haughton Woods, and Mrs Harriet Phillips Eaton were elected members of the Society.

Prof. Alfred C. Haddon, of Cambridge University, England, gave an illustrated address on the ETHNOGRAPHY OF BRITISH NEW GUINEA, based largely on the results of his recent expedition to Torres straits.

After a vote of thanks to Professor Haddon the meeting adjourned.

LIVINGSTON FARRAND, *Recording Secretary*.

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Goodyear, W. H.	Low, Seth
Grinnell, George Bird (<i>f</i>)	Lumboltz, Carl (<i>f</i>)
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No. 3

SKETCH OF THE ORIGIN, DEVELOPMENT, AND PROBABLE DESTINY OF THE RACES OF MEN¹

By WILLIAM H. HOLMES

In early times the problems of humanity were solved as soon as presented. The fathers settled all questions of the past and present off-hand, and the creeds formulated were blindly accepted by a credulous world; but modern thought has passed beyond these primitive methods, and the history of mankind has taken its proper place in the general plan of life and evolution. Long ago the Greeks, and others, no doubt, had glimpses of the true position of man in the scheme of nature, but the body of independent thinkers was too small to leaven the vast lump of traditional error. Students are now, however, more favorably situated, and are making gratifying headway in the comprehension of man and his relations to the universe. They are working their way backward along the devious course of his coming, and dare to glance forward in the direction of his going. They have learned much of the present and have had many glimpses into the less

¹ Address of the retiring President of the Anthropological Society of Washington, delivered under the auspices of the Washington Academy of Sciences, February 11, 1902.

remote past, while of the far-away past and the deeply shrouded future less vivid impressions are gained.

The attempt to compass so vast a subject is necessarily fraught with great difficulties. There is no adequate viewpoint for such an extended panorama. It is a rule of pictorial art that in order to comprehend the subject clearly the artist's eye must be distant from the picture twice or thrice its width. It is almost equally true that to properly rate the career of an individual one must be generations away, or, if of a race of men, at an indefinitely vast distance. Today, fortunately, the phenomena of the universe are viewed with the eyes both of the past and of the present. The history of nations is seen, as it were, with the eyes of all mankind, with the collective vision of all experience, and the accumulated wisdom is utilized in reading the past and in forming a picture of the future.

From the vantage point that geology furnishes it is seen that many races of creatures have come and gone; have had a beginning, a gradual expansion, and a grading off to extinction or into other forms; and, on closer study, this is found to be a law of all things, animate and inanimate, so nearly universal that an exception may not readily be found. The individual of all creatures, physically speaking, passes through a highly organized form and returns to dust; the families of creatures rise, expand, and vanish; worlds do the same. Nothing is stable save the cause and the laws of change. Unceasing change is the rule of nature; nothing that now is can be the same the second following, and it is only a question of time when transformation shall overtake the individuals, the races, and the worlds.

As my subject is a vast one I shall try to paint it with a broad and sketchy brush, and with the aid of pictures and diagrams will present and emphasize some of the greater truths of man's condition and history, and of man's speculations about man.

Summoning the whole human family into the field of vision, we behold a motley array of fourteen hundred and eighty millions

of creatures called men. Taking a hasty survey we find them assembled on the various land areas of the world as nations, tribes, and families; but looking more closely the eye catches the strange distinctions of race. At the right the assemblage is white, and at the left it is black, while between are varying shades of yellow and brown connecting the extremes by insensible gradations. Along with the difference in tint and tone go certain dissimilarities of form, stature, proportion, and physiognomy, emphasizing the distinctions due to color and thus blocking out the groups called races — the Caucasian, the African, the Mongolian, and the American. These distinctions are the most striking and important that can be made, and the races naturally become the subject of special study.

In beginning our examination we are at first embarrassed by differences in appearance that result from culture. The civilized nation seems to have a vast advantage over the uncivilized, and the polished and well-groomed man and woman seem of a higher type than the poor, ignorant, and decrepit, but such differences are only superficial and do not characterize race. To get a clear conception of the real relations of the races we must, in imagination, sweep away all differences in condition and take the average man and woman of each race. What seemed to be important distinctions vanish at once, and we compare race with race on an equal footing. Going from extreme to extreme of the line, we realize how much alike the races are in all essential features. Observe the physical characters — the form of the head, the body, and the limbs; the relative proportions of the parts, the upright position, the graceful movements, and the smooth skin. Note the intellectual qualities, the use of articulate speech, the ability of each to learn the speech of all, to practise the arts of all, to sing the songs of all, and to think the thoughts of all.

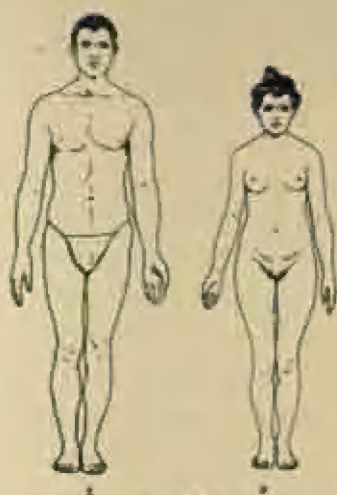
The accompanying outline figures (plate XX) take the place of the large series of lantern slides used in illustrating this paper as presented before the Anthropological Society. Nearly all are

from photographs and serve to show in a striking manner the general physical unity of the races of men. The views of apes which follow (plate XXI) are quite sufficient to emphasize the wide gap between the human and the brute. It is sometimes asked whether the highest ape is not higher than the lowest man. This question is sufficiently answered by comparing the figures of Australians, who are near the base of the human series, with the gorilla and the chimpanzee, the highest of the brutes.

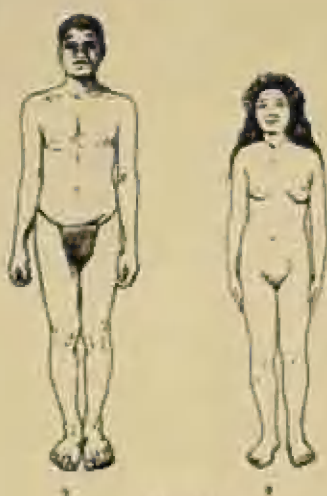
The characteristics of the Caucasian race are familiar to all. The two examples presented in this series (plate XX, figures 1 and 2) are not drawn directly from life, but being somewhat ideal may well stand at the head of the list, representing our highest conceptions of human form and proportion.

In passing to another race it is observed that we do not leave the typical human characters behind. Of the central Mongolian — the Chinese and their closer allies — no examples are available, but they are no doubt equal in physical development to the border groups, of which figures 3 and 4 are representatives. The first of these is a Filipino man of Luzon, and the second a woman of the same group. Passing on to the straight and wavy-haired peoples of Polynesia, we meet other modified Asiatic types equal in physical perfection to the highest Caucasian.

It is customary to think of the Eskimo as a somewhat modified Asiatic, and of the American Indian, although probably of the same origin, as being so fully differentiated as to be classed as a separate race. Two Eskimo figures, reproduced from photographs published by Captain Peary, are given in figures 5 and 6 of the series. Although from time immemorial leading a life of many hardships, the Eskimo are still a remarkably comely race. As to the Indian, there are as fine physical types among them as can be found anywhere in the world. I present only two examples, figures 7 and 8, chosen from the most lowly savages found on the American continent, the houseless, poorly nurtured inhabitants of Tierra del Fuego.



CAUCASIAN



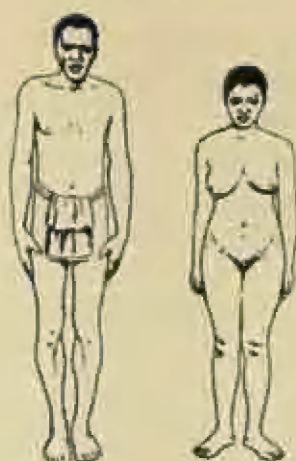
MONGOLIAN



AMERICAN (ESKIMO)



AMERICAN (INDIAN)



AFRICAN



AUSTRALIAN





13. CHIMPANZEE



14. ORANGUTAN



15. GORILLA

TYPES OF THE APE

It is to the physical characteristics of the so-called lower races that I wish to direct special attention. In color, physiognomy, hair, etc., there are certainly wide distinctions between the black and the white, but in all the elements that go to make up the physical type of *Homo sapiens* there is practical identity. By the crossing of the races the most divergent characters grade imperceptibly one into another. Two ordinary Africans are shown in figures 9 and 10.

The last of the series, the Australian (figures 11 and 12), although now and always, no doubt, a debased savage, is still distinctly a man; and a glance along the line from Caucasian to Australian will make it clear that the range of the human form divine is after all a narrow one, the differences, except in minor features, being difficult to express by graphic means.

To realize how very near to one another the various members of the human family are, it is necessary only to compare them with the innumerable other groups of creatures in the world; indeed, it is quite enough to contrast them with their nearest of kin, the man-like apes (figures 13, 14, 15). These creatures form four groups much more widely separated from one another than are the four races of man from one another, and with a vastly wider gap between their highest form and man. They are, however, considering the entire class of mammals, grouped with men as anthropoids, which are set apart by a very wide interval from their next of kin the lemuroids. How far they stand apart from man is indicated by the illustrations. The twelve figures at the left show the human form in nearly its full range. The three figures at the right stand for the apes, half upright tree-dwelling creatures without articulate speech, long-armed, hairy, strong-jawed, small-brained, and brutal.

There are, however, many suggestions of relationship between man and brute, and we are led to believe that the wide gap must at some period have been bridged. Among all races there are individuals deficient in physique or mental capacity, or debased

through poverty and crime whose appearance suggests reversion to lower types. But there are still more real and convincing evidences of the relationship of man and the apes than is furnished by these poor degenerates. Between *Hominidæ* and *Simiidae* several fossil forms appear — the much sought missing links. Some of these are lower men (Neanderthal, Spy, etc.), some are intermediate or higher apes (*Dryopithecus*); and one, from the Tertiary formations of Java (*Pithecanthropus erectus*), is midway, or nearly so, between man and ape. These seem like meager proofs indeed to support a proposition of such magnitude, but, since the present is only the initial period of investigation in the great field of human paleontology, it is to be expected that further testimony will be forthcoming and that the geological formations will, in good time, yield ample evidence of the direct genetic kinship of man with the lower forms.

Anatomy and embryology are believed to yield still more convincing proofs that in his origin proud man is linked with Nature's humbler children.

We thus have before us, on the horizon of the present, five groups of creatures — man, chimpanzee, gorilla, orang, and gibbon,—that stand alone among the creatures of the world. Seeking the origin of these allied forms, four questions may be asked and answered.

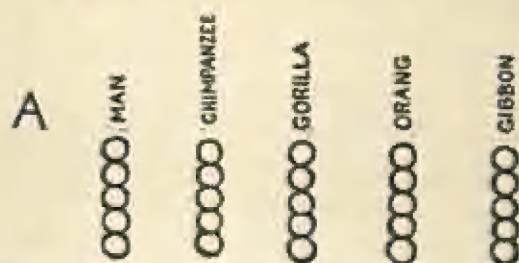


DIAGRAM A.—Theory of the independent creation of perfected forms as opposed to evolution.

First (Diagram A). Were these five groups or any of them independent creations; are they or any one of them the progeny

of a single pair, male and female, formed directly from non-sentient matter by a supernatural power? Science says no; this traverses the laws of nature and cannot be considered.

Second (Diagram B). Did they arise independently on separate ancestral stems through a long succession of simpler forms

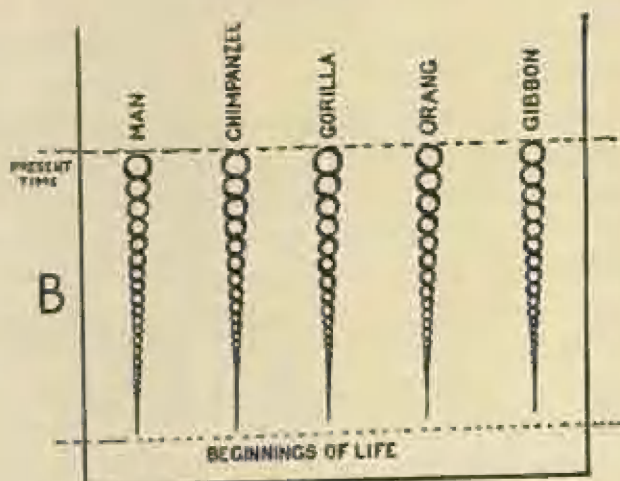


DIAGRAM B.—Theory of independent evolution.

extending back to one or more birth-places of elementary life in the world? Science is agreed that this is improbable in the extreme.

Third (Diagram C). Did one of these forms spring from another, man from chimpanzee, chimpanzee from one of the other known forms, and so on down the line to a beginning in still simpler forms? Few will be found to advocate such a scheme.

Fourth (Diagram D). Have all come up through a succession of antecedent forms from a common ancestral stem, somewhat as branches of a tree, that stem having its ultimate origin ages back in elementary forms of life? This is the theory considered most satisfactory by many men of science. Biology knows no other method. It is not held, however, that the formation of specific groups is as simple a process as the branching of a tree, but the

analogy is sufficiently close for purposes of illustration. The five anthropoid groups are believed to represent the surviving branches of a Tertiary stock, and biology, aided by geology, is engaged in a study of their origin and relations. It is assumed further that this generalized stock had its origin through a suc-

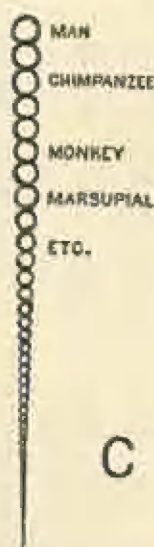


DIAGRAM C.—Theory of the origin of man in known lower forms.

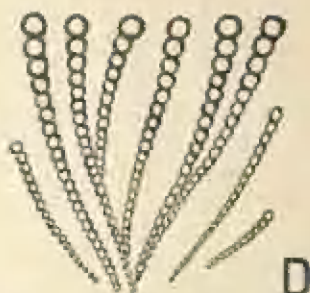


DIAGRAM D.—Theory of the origin of man in some common ancestral form.

cession of stocks going back indefinitely and that the problems of man are therefore the problems of the whole system of life in the world. The entire scheme of biotic evolution is thus involved in our investigation and a few simple diagrams will assist in elucidating my conception of the general subject, which, as a matter of course, is largely hypothetical.

In diagram E a number of groups of beings having different life histories are presented. Each is supposed to begin in some period of the distant past and at some point in the world where favorable conditions for the development of life germs prevailed. They advance through the ages pretty much as individual human beings advance through the stages of life — some dying early,

some flourishing for awhile, some suddenly cut off, and others persisting through all changes of prosperity and adversity. The periods here assumed may be a million or ten million years in length, and each branchlet may represent ten thousand or ten million individuals as well as many genera and species.

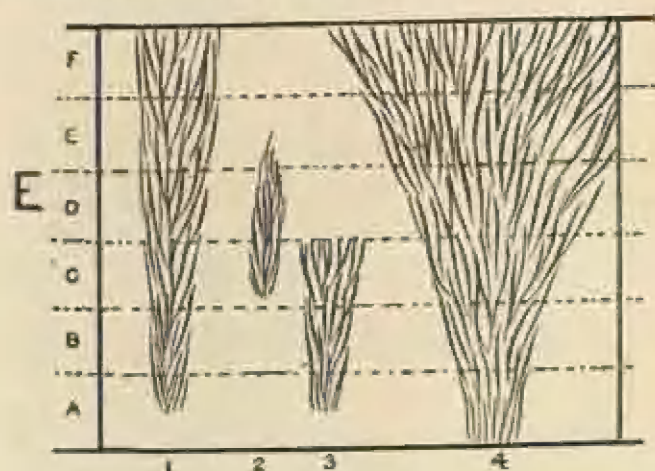


DIAGRAM E.—Life histories of great groups of living forms.

Group 1 begins in period A, and survives with abundant development through all the ages up to the present.

Group 2 begins in period C, and flourishes for a time to die out in E.

Group 3 has its beginning in A, and suffers sudden extinction through adverse changes in its environment at the beginning of D.

Group 4 begins early, in a favorable region of great extent, and thrives and spreads like a vast tree with multitudes of branches rising to the present and peopling the world with its varied progeny.

The vicissitudes to which life groups must have been subjected and the effect of these vicissitudes upon their history may be shown more in detail. In diagram F it is assumed that in period A the life impulse acting on protoplasmic matter produces

great numbers of elementary beings, that the group survives with gradual increase in complexity of organization and variation of form through period B; that this general order of events keeps up through C, D, E, and F, to the present. This is doubtless a much more simple and uniform family history than nature would

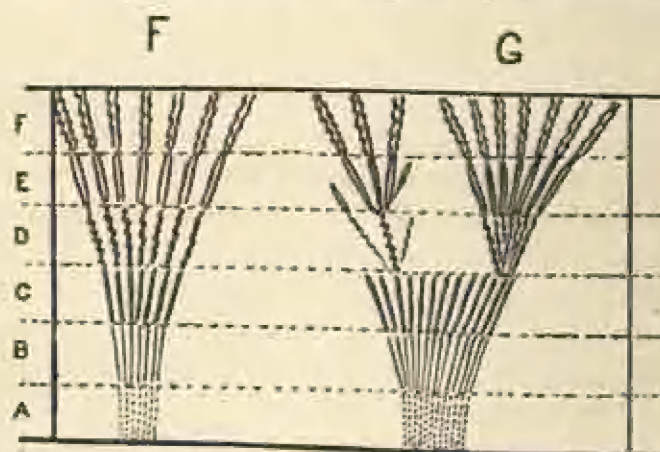


DIAGRAM F.—Group of living forms having a simple history.

DIAGRAM G.—Group of living forms having a diversified history.

be able to furnish, for with a world full of changes and with vigilant enemies ever at hand, wide variations must have been common, and disasters and extinctions not rare.

In diagram G is presented a life stem exhibiting much more varied fortunes. The beginnings are like those of group F. Vast multitudes of simple organisms are born and give birth to succeeding multitudes advancing and changing, intermingling, separating, uniting and separating again until the end of period C. At this stage the habitat of the group, which may be an island, a continent, a lake, or a sea, undergoes a radical change, and conditions become so strenuous that the group barely escapes annihilation. All branches are cut off and die save two that happen to be more favorably situated than the others; these survive and are able to adapt themselves gradually to the new conditions; but being already far separated in their course upward

through periods A, B, and C, they rise through D, E, and F, to the level of the present, strangers to one another and to all other groups of beings in the world. Their relationships could be made out only by anatomical examination, by embryonic analogies, or by the discovery in the rocky records of periods D, E, and F, of fossil remains connecting them backward to the common group at the beginning of period D. It is thus that, in a crude and sketchy way, the histories of great groups of living forms may be outlined.

On some such stem, we believe, and in some such manner man has come up from the earlier forms, parting with many varying groups at succeeding stages to find himself finally on the level of the present in a strange and perplexing state of uncertainty as to what has happened in his past, and as to his relationships with the beings about him, and naturally, without any definite conception of the trend of his future.

If the general scheme of biologic history outlined above be correct, it follows that, no matter what the vicissitudes of any developing group, all of its species, varieties, and individuals necessarily connect back to the primordial forms in which it had its genesis. There may be sports or rapid and exceptional development, but no strays. Nearness of relationship means merely lack of divergence or differentiation, and cannot result from reversion of widely divergent forms or from fortuitous approach of non-consanguineous types.

This may be an appropriate place in which to refer to the question, sometimes raised, as to whether man could have originated in a single pair, or whether at any period of his history there could have existed only a single pair specially created or otherwise existent. Speaking in general terms it may be said that, as we go backward along the course of development of any group of creatures from highly organized to less highly organized forms, we shall expect increase rather than decrease in numbers of individuals. Changes which lead from lower to higher forms are hardly brought

about by sudden modification of individuals, for such limited variations cannot affect the group as a whole, but by changes at one and the same time in all the members of the group that happen to come within the influence of the particular conditions inducing or fostering the change. The number of protozoans in a particular group may have been far greater than were the more highly organized invertebrate forms into which they passed, and the invertebrate group may have been a thousand times more numerous than the vertebrate family which followed. Again, the lower vertebrate family may have far exceeded in numbers the higher vertebrate tribes that sprang from them.

It must be admitted, however, that under certain conditions the number of individuals in a particular group may have been very small and that the building up of a new group from a single pair (assuming sex differentiation as an accomplished fact) is a possibility, though hardly a probability. If, for example, a quick change should come over the habitat of a limited group of creatures, so far destroying it that a pair only escaped destruction and survived to reproduce their kind, we would have what might be loosely termed origin in a single pair, but which is more correctly described as survival through a single pair, since in the blood of this pair there would necessarily run the blood of a thousand antecedent generations. Or suppose again that a single pair of some highly organized animal should by some misadventure be cast away upon a land unknown to their kind and that conditions should prove so favorable that a colony was established, it would seem that a new group and in time a distinct race might thus arise. But all this might come to pass without in the least affecting the general uniformity of biological processes and progress, for all individuals and all groups would connect back to the elementary life germ in unbroken sequence. Special creation is in no sense involved. The term *monogenesis* is sometimes used by writers on ethnology to express the idea of origin in a single pair, but since no instance of

such origin is known to biologists and no such possibility is even postulated by them, this use of the word is misleading and should be carefully avoided. This term, however, is also used to signify origin in a common stem or ancestral group, and is thus contrasted with the word polygenesis, which signifies origin in a number of stems or widely variant ancestral groups. Viewing man as presented in the series of outlines (plate XX), it seems in the highest degree improbable that any extraneous form, the result of wider divergence, has crossed with members of this group since the parting of the ways in Tertiary times. I prefer to think of the present races as representing in their diversified types the fullest degree of divergence attained by the human species at any period of its history. At any rate the divergence could never have been much greater than now without resulting in the full separation of the wider variants; and even if, throughout the entire history of the genus *Homo*, there have been decidedly divergent groups corresponding somewhat to our present races, breeding in and in, yet never fully coalescing, I am strongly inclined to the view that monogenesis will as satisfactorily express the genetic relations of these groups or races as any other term.

One of the greatest facts in biology is divergence of forms with multiplying generations. By divergence we must account for the wide range of species and varieties of highly organized creatures in the world. Convergence also is a well known process in biology, but its action would seem to be extremely limited as compared with divergence, since it is operative only within the inter-fertile range. When any two groups are in process of divergence from the common parent, through gradual separation, converging agencies conspire to prevent the parting, but as soon as the non-fertile limit is passed, sexual intermingling and consequent convergence must cease, no matter what the subsequent opportunities of sexual contact. The fact with respect to the human groups is that they have not varied beyond the mutually fertile limit, so that convergence is the natural order, and its

amount and degree are regulated by laws that may readily be analyzed. Convergence of varieties is no new fact, for increase of facilities of communication of closely allied groups, no matter what the agencies bringing it about, has always in all biologic history accelerated the integrating movements. This point will be made plain by subsequent diagrams.

In order to indicate more definitely the genetic relations of the human groups and the influences that must have affected their character and history, I shall resort to other diagrams. There appear to be two classes of forces concerned in shaping the destinies of developing groups of living things. The first of these is exerted in the direction of variation, divergence, and differentiation, and is always and everywhere active, and the second is exerted in the direction of convergence and integration, that is to say, toward the maintaining and returning to uniformity of type and direct undivided progression, which, as just indicated, is active only within the range of fertile consanguinity. Of the first class I may mention (1) the so-called inherent tendency to vary — no offspring ever exactly resembling a parent, the variations tending toward repetition and perpetuation; (2) the influence of diversified environments, which bring about or encourage change of form; and (3) the processes of selection which favor one class at the expense of another. The second class includes (1) heredity, which transmits characters with a minimum of change; (2) hybridity, which operates to blend all characters and to obliterate all differences; and (3) the conservative or negative influences of analogous environments, which tend to hold variation in check.

We have already seen how fundamentally alike all men are and have reached the conclusion that it is easier to account for the racial differences observed among men on the theory that they arose within a limited homogeneous group through differentiating agencies, than that such closely related beings should spring from distinct origins indefinitely remote to become finally associated and to fertilely intermingle. The biologist can explain

the phenomena in no other way and the anthropologist cannot expect to set up a system of his own. Assuming, then, approximate uniformity of the particular group from which *Homo* sprang, probably in Tertiary times, we seek to illustrate the parts that the various agencies of integration and differentiation have taken in producing the races.

If conditions in a given limited land area are uniform, if the climate is equable, if the land and water are somewhat evenly distributed, if mineral and organic products are alike everywhere, and if no impassable barriers exist, preventing free distribution of populations, variations of a pronounced character would not be apt to arise. Intermingling would be general, constant, and far reaching; and just here we perceive that in considering this question of divergence and differentiation we must take into account the size of the inhabited area in relation to the powers of locomotion and enterprise of the individuals of the group. The varying conditions in two limited, neighboring, connected areas might aid in bringing about specific changes in groups of snails, but hardly in groups of deer.

Diagram H is intended to show that in a limited area the tendency on the part of groups of men to vary and differentiate would be neutralized by the forces of integration. The limiting lines at the right and left represent the boundaries of the area occupied. Intercommunication being easy, tendencies toward varietal partings would be kept in check. A goodly percentage of the families or other limited social groups passing outward to the borders of the area would be turned back again into the general current, always and inevitably. The progeny of one extreme of the area, A, might be the parent of the next generation in the opposite extreme, B, and so on up the ages. In a limited homogeneous area, therefore, pronounced varieties of man could hardly arise.

Enlarge the area (diagram I) and conditions change. Distribution would be so wide that occupants of the more distant districts (C, D) would rarely come in contact, and the flux would not be

complete. The more sedentary communities would develop local peculiarities by means of which the people of the east could be distinguished from those of the west, and those of the north would differ from those of the south, but even with an extended



DIAGRAM H.—In a limited area intermingling is general and variation is slight.



DIAGRAM I.—In an extended area intermingling is not general and variation is pronounced.

continental area, if it be approximately homogeneous in characters, race differences would be extremely slow to develop.

Suppose, however, as indicated in diagram J, which is a map assumed to include four great continental areas, that the habitat is not a unit and that the growing population wanders from the primeval home, or specialization area A, where integration had full sway, into regions separated by mountains or deserts (B, C), and we have at once nuclei of distinct groups and centers of differentiation. But let us imagine that one of the branches (C) pushes out over the margin of the original area and discovers and occupies a new land (E) separated by pronounced barriers (D) from the original habitat. Let us suppose further that this branch becomes

completely cut off from the ancestral stock by geologic changes. The integrating agencies become at once inoperative between the two continents while the differentiating tendencies operating independently in the two groups have entire freedom to widen the breach and lay the foundation for race differences.



DIAGRAM J.—Map of four great land areas illustrating possible variations of race.

The idea may be further elaborated by supposing that pioneers of this group find their way to a third continent (H), forming colonies and laying the foundation for a third distinctive people. But let us suppose again that in the course of time this particular land area is invaded by other tribes from a distinct source of population (I) and in such numbers that there is evolved a hybrid people differing from all other existing groups in physical and intellectual characteristics. We have thus within the areas included in the map three nuclei of specialization and three more or less fully differentiated races,—two produced by separation and isolation of divisions of a single stock, and the third by a totally distinct process, the union of two distinct racial strains in one. It should be noted that the founding of such a mongrel race does not imply the obliteration of either of the races furnishing the nucleus. But now let us suppose that the conditions giving rise to expansion and resultant

divergence should change and that contraction of the occupied areas should take place. Let us conceive that area H gradually sinks beneath the sea or in some other way becomes uninhabitable. The people are driven, let us say, to F. If the differences between groups H and F are only varietal, coalescence will begin and in due course there will be but a single group. Integration will have done its perfect work. If the process should go on and continent after continent disappear until an island only is left at A, the whole effect of expansion and differentiation would be destroyed and a single uniform group would result. If, on the other hand, differentiation had gone so far on each great land area as to establish permanent specific differences, area A would in the end hold within its limited bounds three groups of creatures, related to one another in genesis, but forever set apart as distinct forms.

The land areas of the world have been subject to change always, and the races of men have been shifted from place to place with ever-varying results. Changes in climate and food supply, and movements of rival tribes of men and beasts have aided in keeping the human magma plastic, and the agencies of divergence and convergence have been free to model and remodel the groups.

Having seen how fully the character and destinies of the human groups are necessarily under the control of the areas occupied, their relations and conditions, let us turn to the geography of this world of ours. It is seen that the land areas are widely separated and that the conditions in one differ radically from those in another. There are four or more distinct areas of large size, and all have been occupied for ages, the populations being so completely separated that one knew not of the existence of the other until in recent times. Is it to be expected, then, that all men would be alike? Far from it. Such a result would be absolutely impossible. The differentiating agencies have had full control while the integrating forces have operated mainly within the separate

groups. The races are the natural and inevitable result, directly or indirectly, of occupancy of the isolated continental areas of the earth by primitive man.

I wish now to combine in a single diagram (K) a summary of

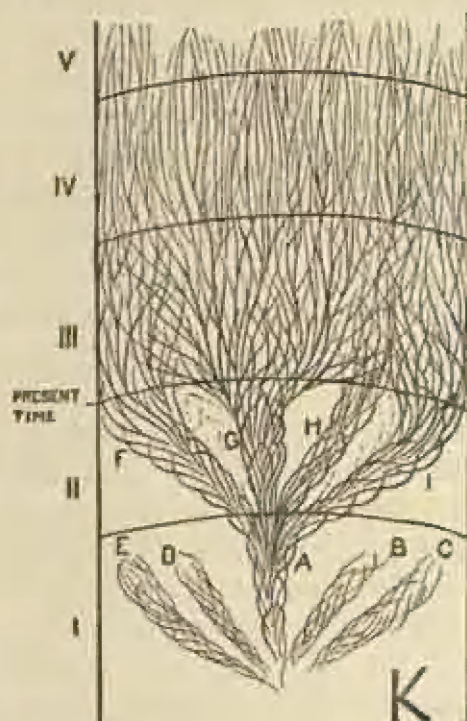


DIAGRAM K.—Showing origin of the genus *Homo* (A) in Tertiary time, separation into races through isolation in Post-Tertiary time (F, G, H, I), and theoretic blending of all forms in future time.

my conception of the development of the species and the races from the period of specialization of the anthropoids up to the present time. The side lines in this diagram stand for the limits of the world within which the branching tree of the *Hominidæ* (A) springs up. The horizontal lines connecting across, mark the periods by means of which we separate the stages of development.

The first period (I) is that which witnesses the specialization of the group of creatures (A) from which man sprang. It may be

regarded as corresponding somewhat closely to the Tertiary period as formulated by geologists. We know not the exact number of closely related branches at that time, but it is held that the prospective human stem flourished and rose above the others. In the diagram the collateral branches B, C, D, E, are left undeveloped in order that *Homo* (A) may have a clear field—in order that we may illustrate more clearly the manner in which this group, according to our best interpretation, spread from its natal district and occupied the habitable world.

That the home of the human precursor was, at this stage of his development, restricted in area is assumed on reasonable grounds. The apes and monkeys of today, which are believed to correspond in grade of development to the human stock of the natal period, are not widely distributed, but occupy very restricted areas and such as are particularly suited to their arboreal habits and their rather delicate constitutions. There is no reason to believe that man at a corresponding stage was more hardy, more enterprising, or more widely scattered.

In the diagram, therefore, the stem A is made narrow below, widening upward, thus suggesting expansion of area with increase in numbers, energy, and intelligence. This expansion was, no doubt, very slow and may or may not have extended to the farthest limits of the land area occupied, but it was prophetic of the greater expansions to be realized in period II. We cannot know in just what part of the world these events took place, just where the prehuman group was transmuted into the human. It may have been in Europe, Asia, Africa, Eurasia, Eurafica, Lemuria, or America, but this does not matter here. We reach the conclusion that at or near the close of Tertiary time (period I) the change occurred and that upright, self-conscious man took his place permanently in the van of progress. We conceive further that, about this time, the continents assumed approximately their present dimensions and relations and that this creature man, breaking over the barriers that formerly hedged him in, was

ready to engage in their conquest. The simple, initial, integrate period of his career had now closed, and a period of marvelous expansion supervened (period II).

Spreading gradually into the various continental areas the incipient human groups, as yet reasonably homogeneous in character, became widely separated. Some were quite completely isolated and went their separate ways, becoming sharply demarcated from the rest. Others less fully isolated continued to intermingle along the margins of the areas occupied, so that gradations of characters occur, and in some cases the resulting hybrid peoples have probably occupied separate areas long enough to become well-established varieties. Three or four groups only became so widely separated and fixed in physical characters that students are agreed to call them separate races, but these comprise the great body of mankind.

The line marking the close of period II stands for the present time, and F, G, H, and I are the races now in evidence. Let us consider what is happening along this line today. The end of the second period—the isolated specializing period—has come for the races, and changes of a momentous kind are being initiated. Man has spread and occupied the world, and the resulting isolations and partial isolations on continent and island of peoples having meager artificial means of transportation, have brought about, directly or indirectly, the variations called races; but the period of group isolation and consequent race specialization is at an end. In the last few hundred years the sea-going ship and the railway have been invented and the extremes of the world are no farther apart than were the opposite shores of a good-sized island when, a little while ago, all men went afoot. The period of differentiation is closed forever and the period of universal integration is upon us. We do not see how rapid these movements are, but contrasted with the changes of earlier days they are as a hurricane compared with the morning zephyr. The continent of America has changed its inhabitants as in the twinkling of an eye, and

Asia, Africa, Australia, and the islands of the Pacific are in the throes of race disintegration. Today each man may go two hundred and forty times around the world in his short lifetime. A single individual may be the parent of progeny in every important land area of the world; and this is only the beginning—the first few hundred years—of a period to which millions must be assigned. Then how shall we project the lines of the diagram into the future? There can be but one answer.

Very briefly we may outline the inevitable course of human history. In period III the races will fade out and disappear as the combined result of miscegenation and the blotting out of the weaker branches. The world will be filled to overflowing with a generalized race in which the dominating blood will be that of the race that today has the strongest claim physically and intellectually to take possession of all the resources of the land and the sea. Blood and culture will be cosmopolitan. Man, occupying every available foot of land on the globe, will be a closer unit than he was on the day far back in period I, when, in a limited area hidden away in the broad expanse of some unidentified continent, the agencies of specialization first shaped up the species.

But there will be an end to the third period. Although it may be far away, it will come as certainly as it is that all things change. The nature of that coming can only be surmised; all depends not on what man may do, although he may do much, but on cosmic mutations, on the maturity and decay, on the lease of life, of the frail little body we call the world, since beyond its restricted limits no mundane creature may extend its conquests. Many surmises may be made as to the course of the declining period of the species and its dwelling place, but these can take only the form of unanswered queries, which may give way to other queries as knowledge of cosmic conditions advances and matures. Such speculations may be utterly unavailing, but they are in no way misleading and must ever be fraught with the deepest interest.

The end must come, but we can only guess what that coming will be like :

(1) Will man multiply, fill the world, and exhaust its resources in period IV, gradually abandon commerce, then discontinue intercontinental intercourse, grow more and more impoverished, lapse through isolation into separate groups again and then into degenerate races of savages, ending a miserable existence in the few areas capable of sustaining life the longest? This result is suggested in the fifth and last period of the diagram.

(2) Will similar results possibly follow from other causes? Will the waters of the surface, already largely absorbed into the earth's crust, sink deeper and deeper as the cooling of the interior goes on until the surface is a desiccated desert unfit for man or beast?

(3) Will the waters continue to act as they act today upon the land, little by little, but nevertheless surely, cut down the hills and mountains until all the land is beneath the sea save such artificial continents as man himself may raise?

(4) Will changes in the atmosphere, now said to be going on, gradually obliterate all life?

(5) In the course of cosmic mutations, will the sun's heat cease to warm this poor clod and a deadly chill fall upon all living things?

(6) Will disaster come to the world through encountering a comet or other wandering body, and will it become part of a new world and the home of a new people? or

(7) Will the forces which now hold the planet in its even course gradually loose their initial control, permitting its final absorption into the central body, the sun?

Whatsoever the course of cosmic events, there is nothing surer than that there will come an end to the races that now are, to mankind as a whole, and to the world he inhabits.

NOTES ON THE HAIDA LANGUAGE

By JOHN R. SWANTON

The following preliminary sketch of the Haida language is put together from notes made in the winter of 1900-01 which the writer spent on the Queen Charlotte islands in the interest of the Jesup North-Pacific Expedition and from a subsequent study of the texts obtained at that time. It is based mainly on the Skidegate dialect. The author had the advantage of previous access to the notes taken by Dr Boas and published in the *Fifth Report* of the committee appointed to investigate the north-western tribes of the Dominion of Canada by the British Association for the Advancement of Science.¹

The phonetic system is similar to the systems of the neighboring coast tribes, abounding in *k*- and *l*-sounds, and in sounds requiring stress in articulation. The following table, drawn up like that in Dr Boas' *Sketch of the Kwakiutl Language*,² presents the scheme of consonants:

	Sonans	Surd	Fortis	Spirans	Nasal
Velar	g	q	q!	x	—
Palatal	g	k	k!	X	ñ
Alveolar	d	t	t!	s	n
Dental	dj	tc	tc!	—	—
Labial	b	p	—	—	m
Lateral	l	l	l!	—	—
Laryngeal catch and breathing:	h, y, w.				

I have omitted the anterior palatal series, because the Haida sounds which should be classed under that head seem to me acci-

¹ Newcastle-upon-Tyne Meeting, 1889.

² *American Anthropologist*, vol. 2, 1900; pp. 708-721.

dentally produced, owing to the presence of a following close vowel. *p* seems to occur only in onomatopoetic elements (*la la skliiA'p-adāgan*, 'he cut it in two'); *b* occurs not more than two or three times in strictly Haida words throughout my texts; and *m*, although considerably more abundant, is by no means common. The catch (') is used in Masset instead of Skidegate *g*, and *x* instead of Skidegate *x*. *x* is like German *ch* in *Bach*; *X* is similar, but pronounced farther forward. Even among old people the fortis-sounds are frequently reduced to simple pauses. This is particularly true of sounds formed far forward in the mouth. At other times they are uttered with rapidity and force. In recording my texts, I found it difficult to distinguish fortis-sounds from sonants. *ɾ* sounds something like *dl*, and *l* something like *tl* or *kl*. In both, the tip of the tongue touches the back of the teeth, and the air is expelled at the sides. *ɽ* is similar, but more of the tongue is laid against the roof of the mouth, and a greater volume of air allowed to escape. *n̥* is identical with English *ng* in such words as *string*.

The Haida themselves distinguish only six or seven vowels. They are *i* or *e*; *ɪ* or *ɛ*; *A*, *a*, *ā*; *o* or *u*; *ō* or *ū*. Those given in pairs do not seem to be distinguished from each other, though the difference between their long and short sounds is certainly recognized. Nor does there seem to be a great difference between *a* and *A*, the obscure sound. *ā* occurs occasionally, as if by accident, but *ā* is found only in Tsimshian words. *ɪ* seems to be an accidental *i*. There is, besides, a constantly recurring vowel combination which I have usually written *a-i*, but it sometimes sounds like *ei*, and often, especially in Masset, as *ɛ*. *u* and *a* in Masset are sometimes reduced to the slightest breathings.

Euphonic changes are not so numerous in Haida as in many other languages. *o* shows a strong tendency to change to *ao* under certain conditions. This may be due partly to the position of the accent, for *a* is frequently introduced to carry it. *dj*, followed by a vowel, frequently contracts to *s*; or, under reverse

circumstances, *s* changes to *dj* (*t!is*, 'rock'; *t!i'dja-i*, 'the rock'). *l* and *j* are mutually interchangeable (*-gijs*, *-gialañ*, a suffix meaning 'toward the woods'), and *d* changes to *t* (*djat*, 'woman'; *djā'ada-i*, 'the woman'). A *g* is retained in the connective *ga-i* after some substantives ending in *a*; otherwise it is usually dropped (*!gā'ga-i*, 'the stone'; *Lua'-i*, 'the canoe'). In ordinary speech the terminal combination *-gañas* shortens to *-gans*. *g* in the Skidegate dialect changes to *x* or *X* in certain situations, apparently after dentals. *p* changes to *b* in the word *sip*, 'sea anemone,' when it takes the connective *ga-i* (*si'ba-i*, 'the sea-anemone'). In the Masset dialect final *-ga* sometimes contracts to *-k*. Many consonants are not used together, but combinations of *s* followed by a *k*-sound or dental, and of *s* followed by *L*, occur frequently.

The entire sentence is brought into close union with the verb by a series of preceding elements which usually have the aspect of postpositions, though sometimes also of substantives. The substantives they follow may, however, be omitted; so it is evident that their dependence is mainly on the verb, and that they are to all intents and purposes verbal prefixes used to incorporate substantives and pronouns in the verb. Such "subordinating prefixes" are *Ga*, 'in'; *Gei*, 'into'; *gi*, 'to' or 'for'; *siA*, 'from'; *qā'ji*, 'inside'; *xē'ji*, 'inside the mouth'; *ai*, 'with'. The subordinate conjunctions (like *!u*, 'when') belong to this series. Even *gien*, which generally has the appearance of a subordinate conjunction, is often used as equivalent to 'when,' and hangs upon the following verb. *Gie'nhao*, *qa'odihao*, etc., are generally used to introduce new ideas, *hao* being a sort of general demonstrative referring to all that has gone before. What has sometimes been called the article is rather one of these subordinating prefixes, which has a very general meaning and has come to be closely associated with substantives in certain situations.

Pronouns, or rather pronominal prefixes, precede the verb-stem, and are often at some distance from it, in which case they

are followed by one of the prefixes just referred to. There is a subjective and an objective series, as follow:

	Subjective Pronouns		Objective Pronouns
		<i>Singular</i>	
1st pers.	<i>I</i>		<i>dī</i>
2d pers.	<i>dū</i>		<i>dāñ</i>
3d pers.	<i>I' or Ia</i>		<i>I' or Ia</i>
3d pers. (indef.)	<i>nañ</i>		<i>nañ</i>
		<i>Plural</i>	
1st pers.	<i>I'ala'ñ</i>		<i>i:!</i>
2d pers.	<i>dala'n</i>		<i>dala'ñ</i>
3d pers.	<i>Ia--go</i>		<i>Ia--go</i>
3d pers.	<i>z!</i>		<i>z!</i>
3d pers. (indef.)	<i>ga</i>		<i>ga</i>

The indefinite forms, *nañ* and *ga*, are used with substantives more often than with verbs, and may then be translated 'a' or 'a certain' and 'some,' respectively, the former performing the functions of our indefinite article. They may, however, be used exactly like the other pronouns and occupy the same positions relative to the verb. *z!* and *Ia--go* now seem to be almost equivalent, but originally *z!* appears to have been used for an indefinite number of known objects or persons. It is often employed in referring to a single unknown object, and has a secondary meaning as a polite or deferential expression, like the use of the third person plural in German. *Ia--go* is simply the third person singular pronoun with a verbal suffix. Followed by the appropriate subordinating prefix, all of these forms may be used as third objects. The pure reflexive pronoun, *aga'ñ*, 'self,' is used in all respects like an objective pronoun, except, of course, that it never occurs as the subject of an intransitive verb like the latter.

Unlike most American languages, the order of pronouns is object, subject, verb. Occasionally a substantive and a subordinating prefix are placed between the pronominal subject and the verb, but the reverse is usually the case. When substantive subjects or objects are used, the corresponding pronouns are seldom

repeated. Sometimes, where a pronoun or its substantive has just been used with a preceding verb, the next verb may occur without it. The object or subject of a transitive verb may be simply understood, expressed by a substantive taken into the verb, or expressed by some prefix: *ɨdjila'da*, 'I have (something just referred to) for bait'; *nda da'a'ñGa di q'i'nda*, 'yours (you) let me see'; *ɨXula'Gasga*, 'I am going to drink (water).'

There is no separate series of independent personal pronouns, but independent possessives are formed by combining the objective pronouns with a suffix, *-Ga*. In the first person singular, however, the form is *na'Ga* instead of *di'Ga* which we should expect. In the third person singular and plural a second form, *A'ñGa*, 'his own,' is used as a reflexive possessive. With substantives the objective pronouns are prefixed and *-Ga* suffixed. Sometimes the suffix is omitted. Reflexive possession, 'one's own,' is indicated in substantives by a suffix, *-añ*, with no pronominal prefix. A word, *gia*, indicates possession in general (*daañ-gia'Ga*, 'your thing' or 'your property').

Words indicating relationship have the plural suffix *-lañ* (*ɨ' qā'Ga*, 'his uncle'; *ɨ' qā'Galañ*, 'his uncles'). Otherwise plurality is left to the context or expressed by adjectives; *sk!ul*, 'a crowd of,' in the case of human beings, and *qoan*, 'many,' in the case of animals or inanimate objects.

Demonstratives are very slightly developed in Haida. The prefix *a-* indicates objects near by; *wa-*, things farther away. They seem nearly identical with the English 'this' and 'that.' As independent demonstratives we have such words as *ajā'nis*, 'a certain person'; *a'nañ*, 'a certain thing'; *a'gosa*, 'this'; *wa'gosa*, 'that'; *a'djxua*, 'near by'; *wa'djxua*, 'far off' or 'some distance off.' *Ga-i* and *hao*, which have already been spoken of, have the significance of demonstratives.

In the verb proper are two principal series of prefixes, one indicating the instrument used in performing an action, the other the shape of an object referred to.

Among the first might be mentioned *L-* and *da-*, 'to do things with the hands'; *kit-*, 'to do things with a stick'; *kil-*, 'with the voice'; *q/ɛ-it-*, 'with a knife'; *Go-* and *Xal-*, 'by fire'; *t/a-*, 'with the foot'; *sLl-*, 'with the fingers'; *q/o-*, 'with the teeth'; *Xu-*, 'with the breath'; *Lu-*, 'by canoe.' The last of these is identical with the word for canoe; *sLl-* and *kil-* also occur almost independently as words for 'fingers' and 'voice.' Even verb-stems seem to do duty as prefixes of this order.

The second series of prefixes is still longer. Among them are *sq/a-*, long objects like sticks; *q/a-i-*, roundish objects; *t/a-*, objects like ropes or chains; *tɛi-*, objects such as sacks or bags. These are often used separately, followed by *-dju*, 'sort,' 'kind.'

There are a few prefixes that cannot well be classed under either head. Such are *ga-i-*, which indicates that the object is floating upon the water; and *gan-*, which means that a set of people referred to are performing an action 'in a body.' In combination the instrumentals precede those indicating shape, and *ga-i-* comes before all.

More different kinds of ideas are indicated by suffixes than by prefixes.

Nearest to the stem are a few which define the particular sort of motion of which the verb-stem gives only a general idea. Such are *-Goñ*, motion by the feet, as in walking, and sometimes by the hands and feet, as in creeping; *-gñ*, motion on the water, as in a canoe. This latter suffix is also used as an independent stem, and indeed the frequency with which two stems are combined in the same verb is quite remarkable.

A certain number of suffixes indicate direction of motion: *-L/xa*, toward any object; *-t/a/*, down from above; *-ɣ*, upwards; *-tɛ/a*, into a house; *-sga*, seaward or to an open place; *-g/ɣ*, landward or 'to cover.'

The largest body of these suffixes indicate various particular temporal relations of which the true temporal suffixes set forth a general idea. Under this head I include *-gan*, the pure

continuative; *-giwañ*, which may usually be translated by the English word 'about,' and gives the idea of a great number of repetitions of an action; *-gin* or *-gini*, 'habitually' or 'customarily'; *-Xit*, to begin to do a thing; *-gi*, to finish doing a thing; *-di*, which gives the idea that such and such an action was going on at a specified moment, and *-dal*, which tells us that the action expressed by the verb to which it is affixed was going on while some other motion was taking place. *-Lagañ*, which indicates that the action expressed by the verb was the first of a series, might also be added. The continuative, *-gañ*, presents us with the only case of real duplication in Haida (*La qí'ngañ*, 'he is looking at it'; *la qí'ngañgañ*, 'he looks at it many times'), but its use does not replace that of plural personal pronouns. *-gi* often involves the idea of continuation of action rather than the end of action, but probably it then means continuation *to the end*.

The suffix *-Tga* (Masset, 'adju') means 'all.'

Negation is expressed by the independent particle *gan* before the verb, and the suffixed syllable *-Gañ* within it.

The true tenses are present, past, two futures, and probably a perfect and a past perfect. Ordinary present time, or time conceived of as present, is indicated by no distinctive suffix. At times the continuative suffix *-gañ* and the usitative *-gin* seem like tense suffixes, but neither is essential to this tense. The past tense takes a suffix, *-GAN* or *-GANi*,¹ and appears to be used precisely like our own. Before the quotative, *wansu'ga*, this suffix takes the form of *-añ*, unless, as is barely possible, the latter is the continuative. Simple future time, in the sense of 'I am going to,' is indicated by the suffix *-sga*, and infallible future occurrence (such and such a thing is bound to happen) by the suffix *-sañ*. The difference between these two futures is apparently identical with that between English 'will' and 'shall' in 'He will go tomorrow'; 'He shall go tomorrow.' The perfect is indicated by

¹ The significance of this final *i*, which occurs with a great many verbs, I have not yet discovered.

dieresis; for example: *La sudaŋ'yaGani'ŋ'la la isda'si*, 'He did differently from what he had said (he would do).' This may be used alone as a perfect, but more often, as in the above instance, it occurs in combination with the suffix of the past tense, thus forming a past perfect.

A curious phenomenon connected with the subject of tense is the use of a final *-s* or *-es* replacing the regular past ending *-GAN*. From a considerable study of this peculiar suffix I feel assured that it is really the contracted form of the verb 'to be,' *ŋ'dji*, and thus involves a simple affirmation that the statements just made *are* or *were* so. It is thus not surprising to find it used after substantives as well as verbs. A common use is after a substantive preceded by *naŋ*, when it has the force of a definite article. Thus, *naŋ Gā'xa* means 'a certain child'; *naŋ Gā'xas*, 'the child (already spoken of).'

Verb-stems are prevailingly monosyllabic, generally consisting of a consonant followed by a vowel. A considerable number of verbs have entirely different stems for the singular and plural.

Auxiliary suffixes are extensively employed. The principal ones are *-da*, 'to cause'; *-gal*, 'to become'; *-xaj*, 'to tell'; *-siŋ*, 'to say'; *-ga*, 'to go'; *-ga*, 'to be'; and probably *-u*, 'to remain in one place,' as one does when he is sitting down or when he lives in a certain place for a time.

The number of moods is very limited. Potentiality is indicated by the word *jiŋa*. This may be used with verbs or substantives indifferently. Thus we have *A'hao qa'-i-tjiŋa'-ihao idjā'ŋ wansa'ga*, 'These were the potential trees, they say' (i. e. they were going to be the trees). For the optative they use this word after the verb and some interjection before it.

The imperative is distinguished by an independent particle, *ŋ* (occasionally *L'*), all temporal suffixes being omitted. Another particle, *gua*, is used to mark interrogation and corresponds to *na* of the Chinook jargon.

Infinitive and participial expressions are rendered either by

the use of the suffix *-es*, just alluded to, or by the general subordinating prefix *ga-i*. The former variety of expression partakes more of the verb, the latter more of the substantive: *NAñ qā'Gawa la dā'Gas*, 'A slave belonging to him'; *GAM gi'na a' Lua'-i qaga'-i qea'ñgañasi*, 'They could not see what caused the canoe to move' or 'the thing causing the canoe to move.' The following is related to the first method: *A' hao gi'na Lua'-i giñgā'is LaiyaGani f'djañ*, 'This thing was the cause of the stopping of the canoe.'

When a clause depends on the same verb as one preceding, instead of repeating the verb a simple breathing, *A*, is used: *LA'gi Li djiñsLXidai'yāGAN, a'NAñ q'ā'-iGodies ta'rdjū' gā'-isLiā-i 7u A*, 'They thought of giving her to him, when this island was half-covered with water (they thought of it).' Similar to this is the use of *wa* before a subordinating prefix to refer to a whole clause (see below).

Adjectives depending upon a substantive are placed after it. When employed independently, they are treated exactly like intransitive verbs. Numerals, when used alone, must take one of the prefixes indicating shape already considered. They may, however, like all other adjectives, be taken directly into the verb as suffixes, and the classifier is not then essential (*L' ta'-idi-ñAstia'-GAN*, 'He went to bed and stayed there two days'; *stññ*, 'two'). The numeral 'one,' when suffixed, has the force of 'always,' 'forever.' At present the decimal system of counting appears to be in vogue, but the old blanket-count was vigesimal. A syllable, *-xa*, is suffixed to numerals and connectives to give a distinctive meaning (*sq'astl'ñ*, 'two long objects'; *sq'astlñxa*, 'two long objects apiece').

Motion in connectives is indicated by a suffix, *-et* (*st'lia*, 'place'; *stliet*, 'motion to the place').

Substantives which would otherwise stand apart from the verb are followed by the subordinating prefix *ga-i*, which then gives somewhat the idea of our definite article. Some substantives are formed into verbs by suffixing the auxiliary *-ga* (*NAñ gi'da*, 'a child'; *NAñ gi'da'gas*, 'one (who) is a child').

The quotative *wansu'ga*, 'they say,' is used extensively in the Skidegate dialect, but not at all in Masset.

The following Haida text will set many of these points in a clearer light :

Giê nhao' caotrà' n' xet' la inagô' lagan.' *Giê nhao nã' gá' xa*
And then one time hair to married. And then a child
and certain

la' gea'wagan,* Gien Gaatxa'n la da'nat telá'annu la lá'ngaiyagan.*
they had born, And our day with him firewood he went for by canoe.

<i>T' gŭga'</i>	<i>cāyagas'</i>	<i>gi agA'h</i>	<i>la qea'gudagaois.</i>	<i>Gie'nhao</i>	<i>han'</i>
Hie son	was fat	he was pleased at the sight of him	(and wanted to eat him).	And then	like

la la sādai'yagan¹⁰ "Dan lgoa i lā-jīnā¹¹ Giēn ga'-ista¹²
he to him said "You nearly I could eat. And from that

11 *Isagwa'-i*¹⁴ *Tu*¹⁴ *I'* *Ita'naogicwa'-i*¹⁴ *sta*¹⁴ *han d'wuu*¹⁴ *gi la si'wuu*¹⁴
they came home when they finished eating after like to his mother he said

"Ha, ha, a'wa-i," di cō'ōca" lgu" di sū'udar" 'Dañ lgoa 1
 "Ha, ha, mother, my father how said to me 'You nearly 1

tā-jīnā' "could not." Gien han Xō'ya²¹ sī wus "Nah gaxd'²² wa' ita²³ stē'da."²⁴
And like Raven said "A certain child from it stop."

La la kilce'daraiyañ²¹ wanañ'ga.²² Ga'-istahao²¹ la la tá'gañ²²
He made him ashamed. they say. From that (time) him be devoured.

They say.

NOTES

(1) *Gie'naa* is the general introductory conjunction; *-aa* refers to all that has gone before.

(2) *so-* is perhaps the subordinating prefix 'in'; *at-* is the subordinating prefix 'with' or 'of'; and *xe-* an adverbial particle meaning 'even,' 'still,' or 'yet.' It has the sense of 'exactly that' or 'right there,' and enters into a great many words like the above.

(3) *Xət* is the object of the verb of which it is practically a part; *ət* is the personal pronoun of the third person singular, subject of the verb. The verb stem is *in-* or *ina-*; *-geəl* is the auxiliary meaning 'to become' and *-caw* is the past temporal suffix.

(4) *Ła* is the subject of the verb, and *u.ə* *u.ə* the object, *u.ə* being the indefinite pronoun of the third person singular. Since the child has not been spoken of before, *u.ə* does not take a final *-*.

Qi- is the stem of the verb 'to be born'; *am* is the same as *o*, the plural suffix following *la*. Thus *la-am* = 'they,' *am* is the suffix of the past tense.

(5) *La* is the third object. The subordinating prefix, *da'nat*, is formed by means of a shorter subordinating prefix, *ni*. *Da'nat* gives a stronger idea of accompaniment than *at* alone. *Taf'ana* is the substantival object. The word may mean 'firewood' or 'fire'. The second *la* is the pronominal subject of the verb; the diresis *-ayy* indicates that the action was completed, and *am* is the past temporal suffix.

(6) *ɛ'* is the prefixed objective pronoun of the third person singular, and *-ga* is the common possessive suffix.

(7) The word for 'fat' is *cat*, *-ga* being the verbalizing suffix, and *-ɔ* the definitive suffix which indicates that 'his son was fat' is to be taken together. It therefore has the force of a participle, 'his son being fat' or 'his son's fatness,' connected with the verb by the following particle *gi*, and may be considered a third object, the whole expression reading 'he pleased himself by sight on account of his son's fatness.'

(8) *Agɛ* is the regular reflexive 'self' and *la* the pronominal subject. *Qat* is from the stem of the verb meaning 'to look at,' but has the force of an instrumental prefix. *Gada* is probably the same as the word for 'mind', *gɔdɔdɔ* ('he desired in mind by looking'). *-ɔ* is the same suffix we have in *ɔdɔyaga*, taking the place of the regular past temporal ending *-ɔan*.

(9) *Han* is always used with the verb 'to say,' preceding or following a quotation. It has the force of English 'like this' or 'as follows.'

(10) *ɛ* is the pronominal object; *la*, the subject. The verb-stem is *ɔdɔ*, *-da* the causative auxiliary, *-ɔiya* the dieresis indicating perfection of action, and *-ɔan* the past temporal suffix. This verb appears to be changed into the transitive by the causal auxiliary, but such is not the case. The verb is always transitive, whatever is said being evidently understood as its object.

(11) *ɛgaa* seems to be an adverb here, not a subordinating prefix. *Dat* is the regular objective pronoun of the second person singular, and *ɛ* the regular subjective pronoun of the first person singular. *Ta* is the common stem of the verb 'to eat,' *jiaa*, the potential ending.

(12) *Ga-ɛta* is compounded of the general subordinating prefix *ga-ɛ*, 'that' (time, place, or what not), and *ɛta*, 'from.'

(13) *ɛ'* is the subjective pronoun of the third person plural; *la*, the shortened form of the verb 'to be'; *-gwa* is the same as *-gwanɔ*, the frequentative suffix which has dropped *ɛ* before the subordinating prefix *ɛ-ɛ*. *Ta* is the conjunction 'when,' and is really one of the subordinating prefixes so often alluded to. This clause might be rendered, 'when the coming home of them was accomplished.'

(14) *ɛ'* is the personal pronoun of the third person singular. With the suffix *ɔaw* it is used for the third person plural and is the subject of the verb. *ɔs* means 'to finish,' and *ɛ-ɛ* is a subordinating prefix inserted like that in the preceding clause. *ɛta* is the same subordinating prefix we have had already in *ga-ɛta*.

(15) *ɛ'waa* is composed of the stem *wa*, 'mother,' and the possessive suffix *-aa* (or *aa*), one's own.

(16) *Gi* is the subordinating prefix 'to,' *la* the subject, and *ɛ'waa* the same verb as *ɛ'waaɔa* without the causative auxiliary *-da*.

(17) In direct address terms of relationship or terms of respect take the subordinating prefix.

(18) *Di* is the objective pronoun of the first person singular, *ɔan* the stem of the word for a man's father, and *-ga* the ordinary possessive suffix.

(19) *ɛgw* is used continually as a sort of indefinite object, meaning 'in what way,' 'in a certain way.' *ɛ* by itself means the same thing, and *ga* is perhaps the subordinating prefix 'there,' 'at.'

(20) *Di* is the objective pronoun of the first person singular, object of the verb following; *-da* is the causative suffix and *-ɔ* the definitive.

(21) *Xɔya* is the regular Skidegate word for raven. At Masset *ɔy*, the same

word as that employed by the Tlingit, is used. Here it is the subject of the verb *st'wuu*.

(22) These two words have been discussed in the first line.

(23) *Wai* is a particle used to sum up a preceding clause or statement when that is again referred to. Here it stands for the words, 'saying I have a mind to eat you.'

(24) *-da* is the causative auxiliary.

(25) *La* is the objective pronoun, third person singular; *la*, the subjective. *Kil-* is the instrumental prefix indicating the voice as the agent; *-siya* is the perfect, *-aū* the form of the past temporal suffix before *wuu* and *ga*.

(26) *-su-* is probably the stem of the verb 'to say,' and *-ga* an auxiliary, 'it is' or 'it was.' Possibly *wuu* is the same as *wa* in *wa'sta*.

(27) *Ga-i* is the general subordinating prefix; *sta*, the subordinating prefix 'from'; *taa*, the general demonstrative.

(28) *La* is the pronominal object; *la*, the pronominal subject; *ta*, the stem; *g-iā*, the past temporal suffix.

THE OSAGE MOURNING-WAR CEREMONY

BY GEORGE A. DORSEY

The material for the following account of this interesting Osage ceremony was collected in April of this year, while the writer was engaged in work, among certain tribes in Oklahoma, for the Field Columbian Museum. On only three of the four ceremonial days were observations made; whatever is here recorded of the other ceremonial day or of events after the ceremony, was obtained largely from Charles Michell, an English-speaking Osage who took an active part in the performance. It must be admitted at once that the present account is, at best, incomplete and fragmentary, and may be regarded of value only as an introduction to a more exhaustive study, which shall give due justice to this interesting rite and curious survival of ancient Osage ceremony.

The spirit of a dead Osage must be avenged, whether the dead be a child, woman, warrior, or old man; this is done by the sacrifice of the scalp of an enemy over the grave. The fulfilment of this obligation is in the immediate charge of a very near relative of the decedent. But before the scalp of an enemy may be obtained, it is necessary that certain rites be performed; in other words, there must be a war dance or ceremony. When, therefore, an Osage by the name of Nahashkōshi lost a favorite son, he became a mourner and it fell to his lot to make provision for the war ceremony. But as there is considerable expense attendant upon the performance of this ceremony, Nahashkōshi was assisted by other mourners, who also wished to satisfy the demands of their deceased relatives. These other mourners were Wainashie and his wife, and William Fletcher. As Nahashkōshi, however,

was chief mourner, the preliminary work of preparation, and especially the choosing of the men to perform the ceremony, were largely in his hands. Therefore, after consulting with his friends he chose two groups—one for the north and one for the south—of four men each. These men were, for the north, Nahinshinka, William Pryor, Big Heart, and John Logan; for the south, Emory Gibson, Hisimoi, Hunkahapi, and Kowahatze. There were thus two men to each mourner, and they were spoken of as helpers.

The head-man of these two groups, together with the mourners, then appointed a time for the ceremony, and all the heads of families among the Osage were notified of the date. The ceremony was to be held at the permanent camp, about two miles east of the agency at Pawhuska. On the day preceding the beginning of the ceremony, the camp was largely augmented by the arrival of many friends of the mourners from Hominy, Gray Horse, and other points on the Osage reservation.

First Day

Early in the morning the four mourners, with their helpers, repaired to an open spot of the prairie lying just beyond and to the west of the camp. Here were selected two men whose duty it was to watch or guard the camp. Of these Tcepakake took his stand on the northwest and carried in his hand a new knife; on the southwest stood Weyekaha, carrying a new hatchet. While the others were making certain preparations the two leaders, Gibson and Nahinshinka, made the entire circuit of the large camp, the former making a dextral circuit, while the latter made a sinistral circuit. As they proceeded, all were careful not to cross their path and to keep out of their way. From time to time they cried out, "Something must die in the west!"

In the meantime two tents had been erected in a north-south line, facing west and about fifty yards apart. These and other preparations were made by younger members of different

societies who, whenever sent on errands, always ran, in accordance with one of the strict regulations of the ceremony. In the northern tent Nahinshinka and his companions took their place, while in the southern tent were Gibson and his followers. Walking back and forth between and in front of the two tents were the four mourners, each muffled from head to foot in a dark gray blanket. On the back of each was a tobacco-bag and a pipe suspended by a cord passing over his shoulders; each also carried a stout forked stick about four feet long, on which they supported themselves from time to time, for the mourners are not permitted to sit down from sunrise to sunset.

Also occupying the open space in front of the tents were two men who played an important part in the ceremony. These were Suquoiinka (Chicken Catcher) for the north side and Waiglalinkia for the south side. Of these, Suquolinka was the more important personage, as he was the real leader of the warrior party (*Washapewinwashowagre*). Both these men were naked except for a loin-cloth. They were painted on the chest with a large circular spot in black, from which extended two black parallel zigzag lines which terminated on the shoulder. Each also carried on his back a tobacco-bag with a pipe suspended from a bandolier. Before one can assume the position of either of these two men he must have been a mourner several times and have given the ceremony. Preparations continued in each tent for the performance. Friends of the mourners and members of the warrior orders gathered at one or the other of the two tents, bringing with them two large drums. The eight helpers in the two tents now painted their faces, having brought with them bags or boxes of paint. Much of the facial painting was in colors, each man wearing his own appropriate paint. All eight men, however, decorated a portion of their faces with black, — the sign of war, — and all wore leggings and moccasins. Two of the men wore on their heads the Osage red and black ornament of elk and turkey hair.

A fire was now kindled to the north of the south tent, and at this the drums were warmed in order to tighten the heads. At about ten o'clock the head-men of the two tents, Gibson and Nahinshinka, again made the circuit of the entire camp, the one from the north tent going by the way of the south, while the one from the south tent went in the opposite direction. They were mounted on horses, and each announced several times that the ceremony was about to begin and asked the men to go to the scene of the ceremony to dance.

On the return to the tents, those on the south side began drumming and singing, while William Pryor, from the north side, stepped out into the open space between the tents and danced. He carried a wooden staff about four feet long, terminating in a crook, and covered from end to end with cotton. He wore only a loin-cloth: the upper part of his body, including his face, was painted black, while on each leg were two parallel, zigzag lines also in black. At the conclusion of the song the drummers on the north side sang, while Hisimoi danced out from the south side. He also carried a crook, and was dressed and painted as was Pryor.

After a lapse of about half an hour, during which time many warriors appeared, arrayed for the dance, all four mourners began a circuit of the entire camp, going first south, then east, and returning by the north side. They were followed by the two head-warriors; then came the singers, with their drum, from the north side, who were followed by the eight assistants and all the dancers from the north tent. As they proceeded to make the circuit of the camp they halted from time to time and sang while all danced except the mourners and the two head-warriors. Pryor and Hisimoi carried their crooks, while Big Heart, Logan, Hunkahapi, and Kowahatze carried shields on their backs. Each of the eight helpers also carried a large gourd rattle.

After their return from dancing around the circle they all rested for a while, except the mourners, warriors, and watchers,

who, as noted before, do not sit while the sun is visible. Then the circuit of the camp was again made as before, except that this time the drummers and dancers came from the south tent, while the circuit was to the north, east, and south, the exact reverse of the first course. By the time they had returned to the tents, nearly all the inhabitants of the camp had arrived, their number having been greatly augmented by the appearance at this time of two or three hundred children from the government school, which had been dismissed that the children might witness the afternoon performance.

At about two oclock prepared food in liberal quantities was provided for the warriors, helpers, and dancers. This was brought to the two tents by the women of the camp, most of whom came from the houses of the friends and relatives of the mourners. The musicians and all those who had danced voluntarily to show their respect for the mourners, ate first. Then a small portion of food was put into the mouths of the mourners, and after them the warriors and helpers ate. The women and children, all gaily dressed and resplendent in beaded buckskin, ribbons, and bright-colored shawls, then came forward, ate a little, and removed the remainder of the food. During the progress of the feast the two warriors kept crying out for the people to bring presents of goods to be given to the poor, and also for payment to the warriors and helpers for their assistance in the ceremony.

A rather long interval now followed, while the helpers and the volunteers repainted themselves in brilliant colors for the afternoon dance. When all were ready they again formed in line and danced entirely around the camp, as they had done during the forenoon, first making a dextral circuit, then a sinistral circuit, and so on until nearly sunset. The remaining dance of the day was to the setting sun. The drummers and singers of both tents now joined forces and took up a position directly to the west and between the two tents. Then the dancers of both sides came forward and danced in front of and to the west of the drummers. The two

sides did not unite, but danced in two concentric circles, open at one point, so that at one time the men from the north would be on the outside, then the two circles would continue moving until the men from the south would be on the outside. At the head of each line was a man bearing a standard which had stood during the day, one to the west of the north tent, the other just east of the south tent. The dancers now rested, while one of the warriors told his war story, at the conclusion of which they beat the drum. Then they sang and danced again, and rested while the other warrior related his war experience.

The sun was now about to set, whereupon the volunteers stepped to one side (the singers maintaining their position) while the eight helpers formed themselves into a crescent-shaped line in front of the musicians, all facing the west. At each end of the line was one of the two standard-bearers, while in front of them, and therefore not obstructing the western view, were the mourners, the two head-warriors, and the watchers. All the dancers now became seated, whereupon the musicians began a song and the head-man on the south side stood up, danced a few moments in the line, then stepped in front of the line and danced until the end of the song, when he resumed his place in the line and sat down. Another song was started, and the head-man on the north side, sitting next to the one who had just danced, arose and repeated the performance. Thus they continued to dance until each man in the line had had his turn, a man from the south side succeeding one from the north, and so on, back and forth, until the ends of the line were reached.

It was now nearly dark, and the performance for the day was at an end. Food was again brought and eaten as at noon. Then blankets were brought for the helpers and the two warriors, while four small, improvised canvas shelters were provided for the four mourners, the openings being toward the east. The musicians and all others who had volunteered their services during the day now repaired to their lodges for the night.

Second and Third Days

The performances on the second day were exactly similar to those of the first, except that there were no preliminary preparations, such as the selection of the ground, the erection of the tents, etc., although the announcements were made as before.

The method of procedure on the third day was like that of the second, except that on this day two additional crooks were introduced. These took precedence over the crooks carried on the first two days and were borne by the leading helpers of the two sides — Emory Gibson and Nahinshinka.

Fourth Day

Early on the morning of the fourth day the helpers and all those who were to take part in the ceremony brought to the tents their sacred bundles (*wahope*). They all now formed in line, the watchers first, then the mourners, warriors, drummers, helpers, and dancers, and proceeded to the west about two hundred yards, where they halted and made a temporary camp. A song was begun and the dancers danced for the benefit of the mourners. Then they danced in a circle, surrounding all who were to join in the hunt. Then the mourners thrust their forked sticks in the ground, the sacred bundles were opened, and a bird, usually a hawk, was taken from each one. The bundles were then tied up, and some of them were hung on the forked sticks while others were taken in charge by boys who were to go on the hunt. The birds were then suspended on the backs of all the warriors by means of buckskin bandoleers specially constructed for that purpose and always found in the bundle. The watchers and the mourners now remained behind while all the others set off to the west, armed with guns and bows and arrows, to spend the remainder of the day, or so much of it as might be necessary, in killing a deer. Of course in former times this was a war party and the object of their hunt was scalps.

As soon as a deer had been killed the party reunited and the helpers severed the head from the body; the head was then fastened down with the four crooks and left. The boys who had been carrying the sacred bundles in the rear came up in the meantime and repacked the bundles, placing the bird-skins back in their proper position. The entire party then returned to the mourners' camp, bearing with them the headless deer, upon which they feasted. One of the warriors had already provided himself with some human hair, which he now distributed among the mourners, in lieu of the scalps. As the hair was handed to each mourner, he exclaimed, "This is what I want! I am glad I have it!" Each mourner next visited the grave of the person for whom he had been mourning and deposited a portion of the hair over the grave; another portion was fastened to the bird belonging to the sacred bundle, while the remainder was attached to the stem of the pipe, which he had carried constantly on his back for four days. Thus ended the period of mourning.

Formerly, on the morning following the fourth day the bundles were opened and prayers were made to the bird for specific blessings, a stick for each blessing invoked being laid by the side of the bird. The bird was then painted and replaced in the bundle. Then followed four additional days of dancing and ceremony, celebrating the success of the war expedition.

EVANESCENT CONGENITAL PIGMENTATION IN THE SACRO-LUMBAR REGION

By H. NEWELL WARDLE

The subject of this paper is one which for some time has created considerable interest among French and German men of science, and my object in presenting it here is not to record any new observation but solely to call to the attention of American anthropologists the various aspects of the questions therein concerned.

Among certain of the darker races, a large percentage of the children present in the sacro-lumbar region one or more well-defined pigmented areas, varying in size, and ranging in color from an almost imperceptible gray to a blue-black or black. Such a color area may, as in the case observed by Dr Chemin,¹ extend downward and upward so as to cover the whole dorsal surface, from thigh to shoulder, including the posterior facies of the arms; in other instances, the more strictly localized sacro-lumbar pigmentation is associated with similar marks in the scapular and interscapular region.

Prof. E. Bætz, of Tokio, who was the first to record its observation and who has shown in the last quarter of a century a constant devotion to the subject, noted the appearance of such pigmented localities in the prenatal life of the Mongolian (Japanese?).² The record of all other authorities commences at birth, from which

¹ Chemin, "Note sur les taches congenitales de la region sacro-lumbar chez les Annamites." *Bull. de la Soc. d'Anth. de Paris*, 1899, p. 131.

² "Zur Frage von der Klassen-Verwandschaft zwischen Mongolen und Indianern." *Verh. der Berl. Gesell. f. Anth., Ethnol., u. Urgesch.*, 1901, S. 394. "Bei dem Mongolenfetus habe ich Spuren von diesen Flecken im 4. Monat nachweisen können."

time until the child has reached an age varying from two to eight years (apparently depending more on individual peculiarities than on geographical locality), the blotches are visible with gradually decreasing distinctness. It was doubtless owing to its publication in a Japanese scientific journal¹ that the notice by Bætz long remained without confirmation by other observers, either for Japan or for other countries.

In 1893 Søren Hansen made known the results of his anthropological studies on the much mixed Inuit of West Greenland, and called attention to the presence upon some Eskimo neonati of discolorations, sometimes "so faint as scarcely to show," again of the deep blue of a bruise. He specifies and figures only four cases, two observed by himself, one by Dr Binzer, and one by Mr Ryder, although the wording of his communication leaves it to be inferred that more were known to him, at least by report.²

In 1896 Dr Matignon, a practising physician of Pekin, noted its frequency among the native children of that city,³ and, in presenting the paper, Dr Collignon referred to a brief mention of evanescent congenital pigmentation among a number of Philippine tribes.

Three years more elapsed before Dr Chemin⁴ called attention to the same characteristic markings upon the children of the Annamese of Cochin China and Tonkin, of the southern Chinese, of the Chinese-Annamese and Chinese-Siamese mestizos, and of the reputed full-blood Siamese of Bankok.

Closely following this, Dr Kohlbrügge,⁵ in a communication regarding the anthropology of the Malay archipelago, postulates,

¹ *Mitth. Deut. Gesell. f. Nat. u. Völkerkunde Ostasiens*, Bd. IV, S. 40.

² "Bidrag til Vestgrønländernes Anthropologi." *Meddelelser om Grønland*, Heft 7, S. 237-238.

³ J. J. Matignon, "Stigmates congénitaux et transitoires chez les Chinois," *Bull. de la Soc. d'Anth. de Paris*, 1896, p. 524.

⁴ Chemin, loc. cit., p. 130.

⁵ Kohlbrügge, "Anthropologische Beobachtungen aus dem Malayischen Archipel," *Vorb. d. Ber. Gesell. f. Anth., Ethnol., u. Urgesch.*, 1900, S. 398.

on the authority of a seven years' residence in that vicinity, the presence of these congenital stigmata among "all Malay and Indonesian peoples" — presumably within that circumscribed area.

W. von Bülow, whose interest in Polynesian anthropology is well known, was the next to come forward with information in regard to this much discussed character, determining its presence upon Samoan children of full and three-quarter blood, its absence upon those of half and quarter blood.¹ Von Bülow states that he has never seen more than a single discoloration of this character upon any child, and that such may be located upon other parts of the body. He distinguishes three types of birthmark, of which the second is permanent and appears to be the true *nævus maternus*.

In an article relating to the significance of evanescent congenital pigmentation, Monsieur Deniker² extends its known geographical range to Java, Korea, and Hawaii on the authority of a personal letter from Dr ten Kate.

This information has since been made public by Dr ten Kate³ in a thoughtful paper in which the earlier data accessible to him are critically discussed. He found two forms of birthmark differentiated by the Hawaiians,—that type which forms the subject of the present essay and a second permanent red *nævus*, evidently

¹ W. von Bülow, "Die Geburtsflecken der Samoaner," *Globus*, Bd. LXXVIII, S. 209. "Bei Ehen in denen die eine Partei samoanischen Ursprungs, die andere Partei aber Halbblut aus Samoaner und Kankasier ist, kommt dieses Zeichen der Kinder meistens — nicht immer — vor. Bei Verbindung von Weissen mit Samoanern oder mit Halbblut Samoanern kommt dieses Zeichen an den Kindern meistens nicht vor. Die Samoaner behaupten das dieses Mal ein sicheres Zeichen der Samoanischen Abstammung sei." The italics are mine. I quote the passage in full, since the personal equation seems to have entered into the translation by the distinguished anthropologist, M. Deniker, when he remarks "cette tache . . . sert de signe pour reconnaître les Samoans pur-sang car elle ne reparait jamais chez les enfants issus de l'union de blancs avec les Samoans purs ou demi-sang; elle est même rare chez les enfants nés des parents Samoa et demi-sang." — Les taches congénitales dans la région sacro-lombaire considérées comme caractère de race. *Bull. de la Soc. d'Anth. de Par.*, 1901, p. 277.

² J. Deniker, loc. cit., p. 278.

³ Der Pigmentflecken der Neugeborenen, *Globus*, Bd. LXXXI, S. 239.

corresponding to von Bülow's third type. In the interracial marriages of Japan he recognizes, as did Bætz, a dependence of the frequency of its presence on the degree of blondness of the European father. His knowledge regarding Java proves to be based on personal communications from his colleagues, Dr Baumgarten and Dr Kohlbrügge, the former of whom noted at least one instance of permanency of these pigmented areas and gave about 90 as the percentage in which the evanescent discolorations occur upon the issue of Europeo-Javanese unions. No evidence relating to Korea is here brought forward by Dr ten Kate.

With the exception of the foregoing, the latest information¹ on the subject, so far as my knowledge goes, comes simultaneously from Messrs Riedel and Bætz. The former records having "observed the so-called Mongolian marks upon children of the Celebes and other Indonesian islands—even upon a young Papua girl." The latter notes its appearance on two Amerind children.

Thus, the geographical area throughout which this evanescent naevus is known to occur, more or less sporadically, extends from Greenland on the east to Madagascar² on the west—Danish Greenland, Vancouver, Hawaii, Samoa, Corea, Japan, China, the Philippines, the Celebes, Java, Malay archipelago, Indo-China, and Madagascar. As will be seen, it embraces more than one ethnic division,—Amerindian, Polynesian, Papuan, Malayan, Indonesian, Negritan, and Mongolian.

Basing their hypothesis on the ground of its great frequency among children of Mongolian race, and overlooking its apparently equal prevalence among the Samoans, both Bætz³ and Deniker

¹ *Verh. der Ber. Gesell. f. Anth., Ethnol., u. Urgesch.*, 1901, S. 395.

² Chemin, loc. cit., p. 132. "Un de mes camarades m'affirm avoir remarqué le même caractère chez les enfants Malgaches."

³ Indeed Bætz goes so far as to say: "Every Chinese, every Korean, every Japanese, every Malay is born with a dark blue . . . mark" (loc. cit. S. 188)—a statement wholly unwarranted by the fact that less than half a dozen men have observed certain definite, though large proportions of cases wherein the stigmata occur. The highest which I have found recorded is 59 % (Chenila), which is greatly in excess of any other statistical datum.

elevate the evanescent congenital pigmentation to the position of a racial character, and ascribe to it Mongolian or Mongoloid significance. Søren Hansen, on the other hand, who knew of it only in West Greenland and Japan, but shrewdly suspected its presence in southeastern Asia, attributes it to a substratum of Negritan ancestry.¹

Great stress is laid by Deniker on the fact that both the West Greenland Inuit and the Samoans regard such marks as a sign of pure descent—i. e. from natives relatively free from intermixture with the white race. This is, at most, an interesting item of folklore. The natives of Samoa are much crossed with immigrating peoples from other island groups, while it "is doubtful if a single Eskimo of pure blood can be found along all the west coast" of Greenland.² Had Hansen's observations been made on the Inuit of Alaska, where the foreign element has been introduced largely by intercontinental trading and by whaling vessels with their Polynesian sailors, it could have possessed no weight. As it is, the occurrence has remained unexplained, save as the survival of a racial character either Mongolian or Negroid in type.

¹ Hansen, loc. cit. "I desire, however, to direct attention to the possibility that it may indicate, as it were, an atavistic rudiment, a sort of a token of descent from a swart race element; neither is such far to seek, since it has (already) been pointed out in southern Japan. Yet is this solely a guess, but in any case that is no reason that one lull himself to rest with the thought that it turns upon a simple curiosity, and, as for the rest, one finds here and there in West Greenland diverse individuals whose very dark skin color points in the same direction. Meanwhile this question can best be solved by closer researches in Japan and southern East Asia, and such are not yet forthcoming."

² Ibid. Résumé, p. 274. M. Deniker, in quoting Hansen, has unfortunately overlooked the word *stærkt*, "strongly," which materially alters the meaning. For this reason, and because the Danish publication is not very accessible, I give the sentence at length with its translation: "Denne Ejendommelighed, som synes at være konstant hos Japannerne, og som utvivlsomt ogsaa findes hos andre østasiatiske Folkelag, betragtes af Vestgrønlanderne som et sikkert Tegn paa en ren eskimoisk Afstamning, hvad den ogsaa synes at være forsaavidt som den ikke vides at være lagttaget hos Børn af stærkt krydset Afstamning," p. 237. This peculiarity, which seems to be constant with the Japanese and undoubtedly also occurs among other East Asiatic peoples, is regarded by West-Greenlanders as a sure token of a pure Eskimo origin, which it also seems to be in so far as it is not known to be observed among children of strongly crossed origin.

In view of the present setting of a current of fashion in matters anthropological, in the direction of the tripartite division of the human species, proposed by the writers of the early half of the last century, it is not surprising that Herr Bætz calls for a study of the "Alpine race" of Europe with the object of establishing the presence of transient pigmentation upon the neonati and hence the Mongolian origin of the darker peoples of that continent.¹ Equally important from the same viewpoint is his observation of the "Mongolian mark" upon two Amerind children, if, indeed, the wish were not father to the observation, for he writes: "I have concluded that this presents a real character of the whole Mongolian race which one should also use for the solution of the much disputed question of the relationship between the Mongols and the North American Indians. I have now had the opportunity of examining in the mission station at North Vancouver, in British Columbia, two Indian children, one pure-blooded of two years, and a half-blood of eleven months. *Both children showed the blue marks*, but, it must be admitted, much less distinctly than do Mongolian children, so that one must look closely in order to notice them."

But I believe it must be admitted that even racial characters are, in the last analysis, dependent upon physiological causes, and as yet no one has attempted to inquire into the basic principle of this noteworthy stigma. Is it possible to assign its origin to the prenatal influences of custom and environment, acting upon an organization peculiar to Mongoloid — or Negroid — peoples? I think not. Climatic diversity precludes the ascribing of such remarkable results to heat and moisture. Were the Inuit alone involved, the almost torrid heat of the igloo interior might be adduced as a rather unsteady support of the hypothesis, but, excluding the Eskimo, the geographical range appears to extend from 50° north to 20° south latitude. But aside from

¹ Hætz, *Verh. der Ber. Gesell. f. Anth., Ethnol., u. Urgesch.*, 1901, S. 393.
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this, the observations of Bætz on thermal pigmentation indicate that the cutaneous deposit of carbon as the result of exposure to heat, is not in circumscribed areas, but in a net-like complex. He notes this peculiar pigmented reticulation upon the lower extremities of Japanese merchants who sit on the edge of their "kotatsu," the heated excavation into which the feet depend, and which is covered by the robe,—among European marketwomen, who keep in winter a charcoal brazier under their gowns,—and also over the whole cutaneous surface of the professional bathing masters of European baths.¹ Since the manifestation of the effect of heat upon the skin materially differs from the discolorations under discussion, it is perfectly clear that any thermal influence upon the prenatal life of the child must be excluded.

One other hypothesis presents itself, one which was vaguely foreshadowed by Dr Chemin when he suggested that "these naevi may well be, so to speak, reserves of pigment (which are) used up in early life."²

The problem which I offer for consideration is this: May not these evanescent congenital pigmented areas be regarded as the nuclei of more general pigmentation, the regions wherein occurs the first deposition of the cutaneous pigment normal to the darker races and peoples, and is their apparent disappearance not to be explained by the deepening of the tint of the whole body surface?

The peculiarity of the blotches as observed by Bætz would seem to be that the pigment was found not in the deeper cells of the rete Malpighii, but in that part of the dermis adjacent thereto³; nevertheless, if Monsieur Bloch is correct, the normal development of pigment in the outermost dermal cells is a well established fact.⁴ When it is remembered that the cells of the rete

¹ *Ibid.*, p. 206.

² Chemin, *loc. cit.*, p. 131.

³ Deniker, *loc. cit.*, p. 276, footnote. Also Bætz, *loc. cit.*, S. 189.

⁴ *Ibid.*, in discussion, p. 281.

mucosum are derived from those of the dermis, the fact that the pigment of the so-called Mongolian mark is situate not in the deep epidermal cells but in the underlying dermal tissue becomes very significant, for it would seem to be precisely in the latter layer that the earliest deposit should be expected.

Von Bülow's statement that, owing to intermixture with other oceanic peoples, the color of the Samoans ranges from light brown to almost black, and that in accordance therewith varies the age at which the mark disappears, might be construed in favor of this supposition; but his personal knowledge of cases where the discoloration is permanent, *especially among dark-complexioned natives*,¹ presents a condition which would remain unexplained.

One other observation seems to militate against this theory. Dr Kohlbrügge remarks that the natives of the Malay archipelago are as fair as the immigrated Europeans, but the native children are more highly pigmented than the adults,² a statement which I am unable to reconcile with the hypothesis.

Should this prove to be the real solution of the question, we would expect to find such nuclei of pigmentation appearing early in the interuterine life of the negro. I am not aware whether or not this is the case, but according to Dr Chapman "the color of the dermis in the negro is the same as that of the white, and the whole skin of the negro foetus is as pale as that of the white one, the pigment being developed in the deep cells of the rete mucosum only at or after birth."³ Deniker, it would seem, is unaware of this, for in discussing the occurrence of the transient birthmarks among the natives of the Philippines, he takes occasion to say that "the pure Negritos could not have the pigmented marks upon their black skins; it probably refers there to mixed

¹ Von Bülow, loc. cit. "Doch kommen auch Fälle vor in denen dieser Fleck, —besonders bei dunkelfarbigen Eingeborenen—nie schwindet. Solche Fälle sind mir bekannt." Unfortunately he fails to state the distinction between such permanent forms of the *leila* and the second type of *leila*, the permanent mother's mark.

² Kohlbrügge, loc. cit.

³ H. C. Chapman, *Treatise on Human Physiology*, 1899, p. 701.

Negrito-Indonesians."¹ It is for the specialist and for those better acquainted with the abundant literature relating to the negro to investigate this phase of the subject. Should such stigmata occur, and yet have remained unrecorded, for Africa, by travelers, the cause of the omission may lie in the widespread custom of darkening in smoke, or otherwise, all infants who do not attain to the correct tribal tint, a custom which is also in vogue in Samoa.²

Again, should the hypothesis advanced in this paper be correct, the presence of early pigmentation would be microscopically noticeable among the darker groups of the Eurafrian race, without in any sense predicated for them Mongoloid affinities. That such evanescent pigmentation does occur within the limits of this race, when expatriated, is shown by Dr Baumgarten's observation that "among full-blood Europeans also, this mark occasionally, though rarely, appears."³

It is greatly to be desired that the whole problem be considered by American anthropologists *sans parti pris*. We have here facilities for such study which do not exist in Europe. Of far more importance than the pointing out of racial characters is the discovery, the study, the verification of the fundamental principles of growth involved in the production of those race characters, when such in fact they prove to be.

¹ Deniker, *loc. cit.*, p. 276.

² Von Bülow, *loc. cit.*

³ Quoted by ten Kate, *loc. cit.*, S. 240.

TROPICAL ACCLIMATIZATION

By J. ELBERT CUTLER

The fact that the white race has spread rapidly over all the fertile regions of the temperate zone and that emigration is now turning toward the tropics, gives special importance to the question of tropical acclimatization. Much has been written in a general way about the colonization of the tropics and the dangers of a tropical climate, but little has been done toward a scientific investigation of the phenomenon to which the name acclimatization is given. If it can be shown, however, that it is possible for the white man to become completely acclimated in the tropics, much will have been accomplished.

So late as 1850 Dr Knox of London declared that Englishmen transplanted to America and Australia must inevitably deteriorate and would die out in a few generations. The absurdity of such a statement does not need to be pointed out, but it is to be noted that this suspicion of the temperate zone has now been transferred to the hotter region, and that those who adopt this attitude rely on the very arguments which were brought forward against the acclimatization of Europeans in the more temperate regions of North America and Australia, viz., an enormous death-rate, physical deterioration, and reduced fertility. Modern science demands a thorough reëxamination of these arguments and the alleged facts supporting them. In an able paper read before the Royal Geographical Society in April, 1898,¹ Dr L. W. Sambon pointed out the absurdity of many of the opinions hitherto held in regard to acclimatization in the tropics and presented some

¹ *Geographical Journal*, 1898, vol. xii, p. 589.

strong evidence in support of his position. Much of the following is taken from or suggested by Dr Sambon's monograph.

The pessimistic opinion in regard to tropical climate arose at a time when scientific knowledge was in its infancy, and as a result of the popular discussion of the question by statesmen, geographers, meteorologists, and journalists, the old theories based on obsolete and erroneous medical opinions still prevail in the public mind. It has been repeatedly asserted that a tropical climate in itself has a peculiar effect on the human body and its functions. Ripley states it in the following words, which may be considered a very good summary of the views held on the subject by the French authorities and others: "Respiration becomes more rapid for a time, although it soon tends toward the normal; the pulse beats more quickly; the appetite is stimulated; a sur-excitation of the kidneys and sexual organs ensues; the individual as a rule becomes thinner; the liver tends to increase in size, which is, perhaps, the cause of a certain sallowness of the skin; in females, menstruation is often disturbed, the age of puberty being sooner reached."¹ In another place this author says that heat is the cause of humidity and generally accompanies it. This retards radiation through perspiration and is the cause of physiological disturbances; the blood is not properly purified and anemia ensues, if more immediate effects do not manifest themselves in intestinal disorders. But the force of all this is lost when he adds, in conclusion: "The exact nature of the physiological processes induced by the tropics is, however, so imperfectly known that we must in general rely upon concrete experience for our further conclusions."²

At one time malarial fevers were attributed to moonshine just as anemia, hepatitis, and sunstroke are still attributed to heat. In the annual report of the United States Army to the Secretary of War, heatstroke is classified, along with drowning and

¹ Ripley, *The Races of Europe*, 1899, p. 574.

² *Ibid.*, p. 578.

lightning stroke, under injuries. Dr Sambon asserts that anemia is never caused by heat, and cites the observations of Maurel, Marestang, Eijkman, and Glogner, who have proved beyond doubt that in tropical regions the influence of high temperature causes no change in the proportion of red corpuscles in the blood. The various diseases of the liver met with in the tropics are common among Europeans in temperate regions, but their accepted etiology is forgotten and they are curiously attributed to heat. Through bacteriology, then, the parasitic nature of malaria, anemia, and hepatitis have now become recognized. Sunstroke has remained the one condition that authors could bring forward to prove the noxious influence of heat. Dr Sambon thinks that this is also an infectious disease. Its premonitory symptoms indicate clearly a period of incubation. Its relapses, its morbid anatomy, its peculiar geographical distribution, its epidemic outbursts, the conditions of climate and soil under which it prevails, the relative immunity to its attacks afforded by acclimatization, all clearly point to the specific infectious nature of the disease.

Dr Sambon, however, draws a distinction that most writers do not make. Instead of classing heat exhaustion and thermic fever together under the head of sunstroke, he separates them. Heat exhaustion he calls syncope, and thermic fever is, therefore, the specific infectious disease to which he has reference. To this he gives the name *siriasis*, the oldest name for it, used by the ancients because they thought it occurred in the hottest months when Sirius, the dog star, rises and sets with the sun. The prevalence of *siriasis*, like that of enteric fever, cholera infantum, and other infectious diseases, is closely connected with summer, but it is important to remark that this connection with the hottest season does not necessarily imply a connection with the highest temperature. Indeed, it has often been observed that the hottest days and hottest years are not those in which the disease especially occurs, and again, it is not always found in the warmest regions. Many of our workmen, such as metal-casters, glass-blowers,

furnacemen, and stokers, are exposed for hours together to far greater heat than ever emanated from a tropical sun, yet they never suffer from siriasis. Men who work in Turkish baths are subjected to a high temperature and a moist atmosphere, two conditions which have been regarded as peculiarly conducive to siriasis in the tropics, but these men suffer mainly from rheumatism and tuberculosis. In the United Consols mines at Gwennap, in Cornwall, the temperature is 125° F. Siriasis has never occurred among its miners; their special disease is tuberculosis.

Siriasis must be distinguished carefully from syncope, alcoholic coma, cerebral hemorrhage, epilepsy, and especially from cerebrospinal fever and pernicious malaria. Syncope is common among old stokers,—“stoker’s collapse”,—who are very liable to cardiac affections on account of their laborious occupation and of their free indulgence in strong drink. It is very frequent among soldiers, who likewise suffer exceedingly from circulatory disorders. Soldiers fall unconscious from syncope on parades. Col. Charles R. Greenleaf, chief surgeon, Division of the Philippines, in a report dated May 31, 1901, says: “It is an interesting fact that heatstroke generally so much feared in the tropics is practically unknown here; men often drop out on the march overcome by heat, but fatal stroke and lasting heat exhaustion is very rare.” Dr Patrick Manson, of the London School of Tropical Medicine, says that heat and moisture are not in themselves the direct cause of any tropical disease.¹ Ninety-nine per cent of these diseases are zymotic and are caused by germs requiring a tropical habitat. Disease germs are as much members of the fauna and flora of a country as are the other living things found in it, and they are amenable to the same laws and conditions determining geographical distribution. Chief among these conditions are heat, moisture, and the nature of the soil.

Much remains to be done in this field of investigation, but the

¹ *Report of the Surgeon-General of the Army*, 1901, p. 132.

² *British Medical Journal*, 1898, vol. i, p. 1168.

opinion that the microbe is the real enemy which is to be met in the tropics, is strongly supported by some of the highest authorities in tropical pathology.¹ If this be true, then it is as possible to combat the microbe in the tropics as in the temperate zones, by sanitation and hygienic precautions.

The same difficulties which oppose the colonization of tropical lands at the present time were met by the ancient Greeks when they colonized Sicily and southern Italy. Malaria was rife in all the places which offered the best commercial prospects. In England malaria has almost entirely disappeared, but in Italy it is still deadly to the laborers of the Roman Campagna and the rice-fields of Lombardy. The French thought at one time that they would never be able to thrive in Algeria, because the climate was considered deadly to Europeans. Now invalids are sent to that country, many of the localities having obtained the reputation of excellent sanatoria. The West Indies, which used to be considered the "white man's grave," now rank among the best health resorts. The death-rate of European troops in the tropics, which used to be 129 per 1000, is now as low as 12 per 1000 in India. In Trinidad and Barbadoes sickness and mortality among the European soldiers are actually less than at home. Only a century ago smallpox was as great a scourge in the temperate zone as tropic fevers are today in the tropics, yet science has reduced that evil to relative insignificance. Hygiene and sanitation have thus accomplished much, both in the temperate zones and in the tropics, and certainly much more may be expected from wider experience and further knowledge.

A fact which gave rise to the pessimistic notion about tropical colonization was the fearful mortality among the first white visitors to tropical shores. This, however, may be explained by their insanitary ships, their insanitary habits, and their ignorance of tropical conditions of health. The fertility of the land and the conveniences of trade have generally determined the

¹ *British Medical Journal*, 1898, vol. 2, p. 912.

location of settlements on the deadly alluvial soils at the mouths of rivers. Towns thus built in the very worst places in consideration of their apparent value, but totally regardless of their qualities with reference to health, are largely responsible for the reputation of unwholesomeness which is associated with tropical countries. Bordier says that in a general way the mortality of a race increases in the measure that it displaces itself toward the equator.¹ Such a statement is too sweeping, and it leaves out of consideration many elements which may be eliminated. Climates do not depend entirely on geographic position, for they are affected largely by a variety of conditions, such as the distribution of land and water, the nature of the soil and the vegetation, elevation or depression, and the character of the land at or adjacent to the place under consideration. Facts do not bear out the assertion, for the Spaniards and the Portuguese, according to Bordier himself, have a lower mortality rate in Cuba than in Spain.

Alfred Russell Wallace, who lived and worked for twelve years within ten degrees of the equator, in the Amazon valley and the Malay archipelago, says² that the great trading centers of tropical America from Havana and Vera Cruz to Rio de Janeiro owe their extreme unhealthfulness to two main causes; first, the absence of all effective sanitary arrangements among the native population, and second, the fact that they were for several centuries emporiums of the slave trade. The slave ships reached their destination full of indescribable filth, which year after year was poured into the shallow water of the harbors and soon formed a permanent constituent of the soil between high and low water marks. In the East there were no such slave ships and there is no yellow fever. Mr Wallace goes on to say that his own experience has shown him that swamps and marshes near the equator are perfectly healthful so long as they are left nearly

¹ Bordier, *La Colonization*, 1884, p. 91.

² *Independent*, March, 1899.

in a state of nature, that is, covered with dense forests and other vegetation. It is when extensive marshy areas are cleared for cultivation and for one-half of the year are dried up by the tropical sun that they become deadly. He lived for months together in or close to tropical swamps in the valley of the Amazon, in Borneo, and in the Moluccas, without a day's illness, but when living in open cultivated marshy districts almost invariably had malarial fever. Malarial fever, therefore, he attributes to ignorant dealing with the soil and not in any sense to climate. Bordier is of the opinion that the danger of hot climates resides mainly in marshes. He says that health on board ship in the tropics is generally good and that disease usually makes its appearance when a ship approaches the coasts and the winds come from the shore. Sir Harry Johnston, in the discussion following the reading of Dr Sambon's paper before the Royal Geographical Society, said that it had often been remarked to him by Europeans in Central Africa and that he had said over and over again to himself: "What a delicious climate, but what a cruelly unhealthy place!" In Dr Livingstone's book on the Zambesi expedition he remarks and quotes the statements of several naval officers to the effect that the climate "is like that of Italy." Thus medical experts and travelers agree that it is not the climate in itself that makes the tropics dangerous to the white man.

In this connection it is worthy of note that among the officers of the various life-insurance companies there is a growing opinion in favor of removing from policy-holders all restrictions as to residence or travel, and extending insurance to residents of the tropics on the same terms as apply in temperate regions. Of the sixty-four leading American life-insurance companies, on May 1, 1901, thirty-seven placed more or less restriction on tropical exposure — four permanently forbidding it without a special permit; twenty-four, for two years after the issuance of the policy; eight exempting it for one year; and one forbidding it without a special permit for the period from July 1 to November 1. The

remaining twenty-seven companies placed no restrictions whatever on their policy-holders as to residence or travel.¹

In a report to the Secretary of War, under date of February 4, 1899, in response to the United States Senate's resolution of January 30, 1899, calling for a statement as to the sickness and mortality among the soldiers in the Philippines, Surgeon-General Sternberg made the following statement: "I have to submit that climatic diseases do not appear so far to have been attended with unusual mortality. Malarial diseases have caused no deaths. The total death rate, taken from reports submitted by medical officers for the months July to October, inclusive, equals an annual death rate of 9.36 per 1000 men. This is only slightly in excess of that which prevails in the garrisons of the United States in time of peace. The average annual rate of our army for the decade 1886-1895 was 7.12. Typhoid fever in the Philippines caused deaths equal to an annual rate of 5.16 per 1000 men, or more than half the total death rate. If the deaths from this fever—which is not a climatic disease—be excluded from consideration, the remaining mortality from all causes in the Philippines would be less than the corresponding mortality in the United States." In his report for the year 1900, based on data reviewing the United States Army's experience in the Philippines as late as August 16, 1900, he also says: "The opinion is prevalent among our medical officers that in time of peace and doing only garrison duty the sick rate of the army in the Philippine Islands would be no higher than it ordinarily is in the southern United States." From the close of the calendar year 1900 to the latest reports the health of the troops in the Philippines had been steadily improving. Smallpox, so prevalent and deadly in the early occupancy of the islands, has been almost entirely suppressed. Dysentery, constituting 13.44 percent of all cases of sickness, is the dangerous disease. The health of the troops serving in Cuba was excellent during the year. The medi-

¹ Phelps, *Tropical Hazards*, 1901, pp. 113-114.

cal record of the troops in Porto Rico for the year 1900 is an excellent one, comparing favorably with that of the troops serving at the home stations.¹

Heatstroke receives but slight attention in the Surgeon-General's reports as a cause of disability in the tropics. In his report for 1900, speaking with reference to the prevalence of heatstroke in the entire army, he says that it occasioned 544 admissions in 1898, equal to 3.68 cases per 1000 men, with nine deaths and twelve discharges for disability; and in 1899, 204 admissions, equal to 1.93 cases per 1000 men, with two discharges but no death.² The experience of the United States army in the tropics would seem to support Dr Sambon's position.

Most tropical diseases, like diseases elsewhere, are caused by germs or parasites. These parasites, to maintain their existence, must pass, at some time or other of their life histories, from one human body to another, and must contrive to live during this passage for a longer or shorter period in outer nature. During this temporary extra-corporeal existence, the conditions—temperature, soil, and other intervening factors—must be suitable. Hence arise the peculiarities of geographic distribution of the various germ diseases.³ Dr Manson holds that there is a weak and unprotected point in the life history of every parasite, and since most diseases are caused by parasites, it is possible, did we but know this unprotected point, to stay disease. So firmly has he come to believe this that his opinion on the subject of colonization of the tropics has completely changed. In the discussion following the reading of Dr Sambon's paper, he stated that, contrary to his former opinion, he now thoroughly believes in the possibility of tropical colonization by the white race and that its postponement is merely a matter depending, first, on the growth of knowledge, and second, on the general assimilation and rational application of this knowledge.

¹ *Report of the Surgeon-General of the Army*, 1901, pp. 128-129.

² *Ibid.*, 1900, p. 285.

³ *British Medical Journal*, January 9, 1897, p. 94.

Many writers admit the possibility of acclimatization in the tropics, but assert that the white man in the process of acclimatization will degenerate into an inferior race. On this point we have conflicting testimony. Sir William Moore, for some years medical officer and secretary of one of the hill asylums for European children founded by Sir Henry Lawrence, in India, states that he found the physique of the children, especially that of the females, much inferior in after life to that of children reared in England. To offset this we have the statement of Dr Sambon, who says that thirty years ago Sir Joseph Fayer conclusively proved, from the experience of Lawrence Orphanage, that under proper management children could thrive in India as well as in England, not only in the hill stations but in the very plains of Bengal. The reason for the general opinion is the fact that children are often reared in unhealthful districts and are foolishly managed. For fear of diseases wrongly attributed to solar heat, they are constantly shut up in stuffy and darkened houses, bringing about conditions favorable to the development of the very diseases they seek to avoid. Under similar conditions children thrive no better in England.

Dr G. M. Giles, in medical charge of the Lawrence Military Asylum, Sanawar, Punjab, says: "I am inclined to doubt if there be any marked differences between children reared in India and in England; at any rate, if they get a fair share of the hills. The fact is, that the notions that have sprung up on this point are without exception the result of desultory, general observation, entirely unchecked by the numerical method. Take the oft-quoted statement that you cannot find a single fourth-generation European raised in India and the deduction thence that Europeans deteriorate in India. Where are you to find such a case among people of our habits? The darkest Eurasian will always speak of England as 'home', and if he can only get the money will go there himself and send his children there to be educated. Now, a family too poor to send their children home is hardly

likely to keep up a family history going back many generations, and if they know all about their grandfathers it is as much as can be expected. Few middle-class people, even in England, can go beyond their great-grandfathers. Hence the statement, though probably true, will not bear the deduction; as whatever the influence of climate may be, the fact depends on the social customs of Anglo-Indians, which are such that it is scarcely conceivable that one should find a family that could give an authentic history for four generations and yet had been so poor as to be unable to have its children brought up at home for a more or less considerable portion of their rearing—to say nothing of the fact that it would be practically impossible for such a family to find other similar families quite free from Asiatic blood with which to intermarry through so many generations. . . . The fact is, from the nature of the case it cannot occur, and so cannot be tested.¹

The assertion that a tropical climate *per se* induces deterioration can hardly be maintained. In Europe itself today there is appalling deterioration due to tuberculosis, rickets, and syphilis, and there is no reason to suppose that any deterioration that takes place among Europeans in the tropics should be due purely to solar influences. Deterioration in the tropics, as in Europe, is that condition of organic failure which is characteristic of long-continued (chronic) diseases, such as tuberculosis and leprosy. The two great causes of deterioration in the tropics among Europeans are malaria and tuberculosis. Dr Knox asserted that Europeans settling in America would inevitably deteriorate, but results do not confirm his statement. Other cases of a similar nature might be mentioned.

Coupled with this notion about deterioration there has been prevalent for many years a belief that sterility of the white race ensues after three generations in the tropics. After giving some

¹ *Report of the Seventh International Congress of Hygiene and Demography, 1891, vol. x, p. 184.*

evidence both pro and con, and pointing out the difficulties of eliminating the effects of crossing with the natives, or else of marrying with newly arrived immigrants, Ripley concludes that sterility from climate as a single cause can neither be affirmed nor denied, from utter lack of evidence. Fritsch, the German ethnographer, says that although sterility may result, there is no direct evidence to prove it. Prof. B. J. Stokvis (Amsterdam) makes this statement: "In the only places of which I can personally speak—the Dutch West India Colonies—pedigrees are to be had of true European families, persisting for almost three centuries, without introducing a drop of native blood."¹ Spanish women in Guayaquil, on the authority of Dr Spruce, cited by Wallace, in a region where the temperature is seldom below 83° F., and in complete absence of intermarriage with the natives, are the finest along the coast, and the white population is exceedingly prolific. Clements R. Markham, in a paper read at the Seventh International Congress of Hygiene and Demography, gathered all available information, much of which he had collected himself, and proved that families of pure European blood had been settled for upward of two centuries in places within the tropics and that in each case living representatives were quite the equal of their progenitors in moral and physical development. According to Wallace,² the editor of the *Ceylon Observer* adduces case after case of officers, planters, doctors, etc., who have lived from twenty-five to fifty-eight years in Ceylon and have retained almost continuous good health. He also refers to Dutch families descended from settlers who came out from one hundred and fifty to two hundred years ago and who have maintained average good health even in the heat of the plains. In the Moluccas there are even more striking examples, many of the Dutch families having been continuously on the islands for three hundred years and they have

¹ *Report of the Seventh International Congress of Hygiene and Demography*, 1901, vol. x, p. 185.

² *Independent*, March, 1899.

still the fair complexions and robustness of form characteristic of their kinsfolk in Holland. The government physician at Amboyna, a German, thinks the race is quite as prolific as in Europe, families of ten or a dozen children being not uncommon. There are many examples of continued and even increased fertility. On the authority of Dr Sambon, I may say that the Spaniards in their own country have a birth-rate of 37 per 1,000, in Cuba 41, in Algeria 46, while the French have a birth-rate at home of 26 and of 41 in Algeria. In an address before the New England Free Trade League, in November, 1901, Gen. James H. Wilson spoke in the following terms: "Speaking from my own observation and somewhat extended study of the question, I have not the slightest doubt that the white man can and does maintain his social efficiency unimpaired, at least in all insular tropical countries, and especially in the Greater and Lesser Antilles. He is just as prolific and industrious, class for class, in those islands as he is in the country from which he comes, and there is absolutely no reason why he should not be. In the first place, the climate and temperature of Cuba and Porto Rico are at all times better and more equable than in any of our states in the Mississippi valley south of the Ohio and Missouri rivers. It is warmer and more balmy in winter, and cooler and more agreeable in summer in those islands than it is in Tennessee, Arkansas, Louisiana, Texas, Mississippi, Alabama, Florida, Georgia, or South Carolina, and no one can properly claim, since the war of the rebellion and the economic reconstruction which followed the abolition of slavery, that the white man has physically degenerated in any of the southern states."¹

The belief that the white man cannot work in the tropics has arisen largely from the assertions of advocates of colored labor. It is true, however, that the turning up of a virgin soil is frequently dangerous in the tropics. Hong Kong was especially unhealthful during the first years of occupancy, and Wallace, as

¹ *New York Times*, Nov. 10, 1901.

quoted above, refers to the unhealthfulness of cultivated marshy areas. With this in mind, however, Wallace declares it is not the fact that white men cannot permanently live and work in the tropics. Work of some sort, there as here, is a condition of healthy life. At Para, in 1848, Mr Wallace says he saw a striking case of how a white man can work in the tropics. A young Scotchman had turned milkman for a village, and notwithstanding his hard work, with the temperature from 80 to 90 degrees or upward every day, he was the picture of health and appeared to enjoy his life.

It is a well known fact that in Ceylon and India the men who enjoy the best health are the enthusiastic sportsmen. They seize every opportunity of getting away from civilization and often submit to much privation and fatigue with benefit, rather than injury, to their health. The tea planters of Assam furnish a remarkable illustration of the safety with which Europeans may expose themselves in the hottest sun. Tea planters are a large class and their duties require them to be out in the hottest season and at the hottest time of the day. Sailors do their regular work when stationed in the tropics and do not suffer injury either from the climate or the labor, if not exposed to infectious diseases while on shore. The climate of Queensland is completely tropical, yet white men work in every part of it. In a report made by an officer in the Signal Corps of the United States Army, Division of the Philippines, the statement is made that the men who have the hardest work and most exercise seem to be well, the variety of their work accounting in a measure for their health.¹ The fact seems to be that white men can live and work almost anywhere in the tropics if they are obliged to do so, and unless they are obliged, they will not work, as a rule, even in temperate regions. Wherever there are inferior races they are subjugated by the white man and forced to work for him.

Some writers have advocated crossing with the natives as

¹ *Report of the Surgeon-General of the Army*, 1901, p. 130.

a means of acclimatization. In the strict sense of the word it is not acclimatization at all and it is certainly not essential to acclimatization. While intermarriage is said to be the secret of Spanish permanence in Mexico, the Portuguese who intermarried with the native women in India have been almost entirely absorbed. The most successful examples of acclimatization have occurred where there has been a complete absence of intercrossing, as among the Jews in the Reunion isles and the Boers in South Africa. Dr Sambon asserts that in unhealthy colonies halfbreeds maintain their health no better than pure whites. He says that a cross between races is often apt to be a weakling, sharing the pathological predispositions of each of its parent stocks, while enjoying but imperfectly their several immunities. As yet nothing positive is known as to the mechanism of immunity and the possibility of its transmission by heredity. A great deal has been written about racial immunity, and that of colored races from malaria was once considered indisputable. More recent observations, however, have proved that differences are usually small and mostly unfavorable to the natives. It is commonly observed in the provinces of the Philippine islands that the natives have "calentura" as severely as American soldiers and with considerable mortality.¹ Much of the immunity of natives is only apparent, because we must not forget that those we meet are the survivors. The immunity of the native is not a natural (racial) but an acquired immunity, and the colonizer can acquire it just as well.

It must be remembered that in considering the subject of acclimatization a number of confusing factors should be eliminated. As Ripley says,² the neglect to eliminate these factors vitiates much of the testimony of observers in the field. In the first place, a change of residence in itself always tends to upset the regular habits of the soldier or the colonist. A temperate youth

¹ *Report of the Surgeon-General of the Army*, 1901, p. 134.

² *The Races of Europe*, 1899, p. 361.

in England becomes a heavy drinker in the barracks of India. The deadliness of hepatitis among English soldiers in India is probably due more to the consumption of alcoholic drinks than to the influence of the climate.¹ Hand in hand with alcoholism is usually to be found sexual immorality. An engineer in Algeria testifies that a Sunday will put more men in the hospital than three days in the hot sun. In dealing with the crossing of races and the effects of climate upon fecundity, the elimination of this factor is especially important. The influence of national habits in the choice of food is a third element to be taken into consideration. In this regard the Teutonic nations are specially handicapped in competition with Mediterranean peoples. The English and the Germans insist on their usual allowance of meat, where the Spaniards or Italians are content with cereals or lighter food. The Chinese are especially favored in accommodating themselves to a new tropical climate by reason of their simple diet of rice. The effect of the daily life and profession on the physiological processes is another correction to be applied. An indolent life always and everywhere tends to superinduce a multitude of disorders. An important hygienic precaution to be observed in the tropics is gentle and regular exercise, being careful to avoid over-exertion. Statistics for the Jewish race, confining all its activities to shops in the towns, must be corrected for this circumstance, therefore, before they are compared with statistics for the Germans who, as colonists, take up the ever-deadly cultivation of the soil. Ripley thinks the Boers who thrive as herders would undoubtedly suffer were they to stir up the soil as husbandmen. Wherever slavery exists it always produces a high death-rate and this vitiates the comparison between statistics of the whites and the negro.

Bordier emphasizes the importance of time in the phenomenon of acclimatization.² When wheat was taken for the first time from Europe to Sierra Leone, the first year it produced only the

¹ Davidson, *Geographical Pathology*, 1892, vol. 1, p. 455.

² Bordier, *La Colonisation*, 1884, p. 37 ff.

plant and a few grains; the second year from the small number of grains sown very few germinated, but those that did produced stalks more fertile than those of the first year. From year to year the number of good grains increased, but many years were necessary to bring about the production of wheat identical with that which was brought from Europe. When geese were first taken to Bogotá they laid but few eggs, and the greater part of these were not fertile—even those that were fertile produced weaklings. The year following, the number of eggs, the proportion of fertile eggs, and the number of young ones that were successfully raised, increased. From year to year conditions improved, and at the end of twenty years the goose could reproduce on the plateau of Santa Fè de Bogotá almost as well as in Europe. If it were a question of the acclimatization of man, then years must be changed to generations. Twenty generations at twenty-five years each would make a total of five hundred years, and those who, at the end of fifty years, might despair of acclimatization would, undoubtedly, draw a too hasty judgment. No doubt the requisite number of generations in the case of man, owing to his greater powers of adaptation, would be considerably less than the corresponding years in the other case; but this, again, would be somewhat counteracted by the fact that man has a smaller number of offspring.

It is difficult to draw any definite and well-defined conclusion as to acclimatization in the tropics. Ripley attempts to summarize opinions and to balance authorities, but with little success, for he confuses the terms acclimatization and colonization. The former may be possible, while the latter, for economic and other reasons may be, if not impossible, at least wholly inexpedient. "On the whole," as Mr. Wallace says,¹ "we seem justified in concluding that under favorable conditions and with proper adaptation of means to end in view, man may become acclimatized with at least as much certainty and rapidity (counting generations rather than years) as any of the lower animals."

¹ *Encyclopædia Britannica*, 9th ed. vol. 1, p. 90.

Many authorities agree that Teutonic peoples, as compared with other races, are exceedingly inelastic in power of adaptation to tropical climates, but it is to be doubted if this difference is due to ethnic peculiarities so much as to differences in national habits. Wallace makes the statement that the English, who cannot give up animal food and spirituous liquors, are less able to sustain the heat of the tropics than the more sober Spaniards and Portuguese. This, however, does not make it necessary to answer the question in the negative, and assert that the white man cannot be acclimatized in the tropics. It shows only that in certain cases Europeans have failed to meet the conditions either through ignorance or through imprudence, and that acclimatization is in most cases necessary, not that it cannot take place.

Dr Sambon recognizes the difficulties attending acclimatization, but he thinks that it is in the power of modern science to remove an important section of these difficulties. He recognizes, as does every one else, that the two important obstacles to tropical acclimatization are heat and disease, but he differs from almost every one else in accentuating the fact that these two, as regards their direct action on man, are independent of each other. His predecessors looked rather upon the tropical heat as the cause of tropical disease, but Dr Sambon draws a clear and definite distinction between these two different factors. Disease causes deterioration and tends to exterminate; it must be met by a hygiene directed against the disease germs, and is not to any great extent to be counteracted by adaptation. Heat undoubtedly has a direct influence on our well-being, especially if combined with moisture, but there are two efficient means of protection against meteorological agencies. One is that wonderful process of organic adaptation which can change into hair the wool of European sheep imported to the West Indies; the other is advancing civilization, which tends to make man more and more independent of his environment. Even with our present imperfect knowledge, a colony planted upon the isthmus of Darien

would not be annihilated by the climate, as was the Scotch colony placed there in 1698. The science of reducing the temperature of rooms and buildings is still in its infancy; yet a government arsenal already exists in Marseilles—that hottest of European cities—where the temperature is so reduced by artificial means that artisans can work there with comfort during the hottest months.¹ The reduction in the cost of artificial ice makes possible a more general use of ice in warm climates, and much has been predicted of the effectiveness of the utilization of liquid air for cooling purposes. Many of the simplest mechanical inventions of recent years have contributed enormously to lighten the labor of the agriculturist and the artisan. The demand made upon the laborer today is for the intelligent direction of his implements rather than the use of mere physical strength.

The sanitation of the past, although it has accomplished a great reduction in mortality, has hardly been more than a blind application of measures which had proved useful against diseases in temperate climates. To act efficiently in the prevention of diseases, definite knowledge must be had of the parasites which cause them; their areas of distribution must be known, their various breeding grounds, the conditions favorable to their development, and the means by which they are conveyed to man. A great deal has been recently accomplished in tropical pathology by such men as Pasteur, Koch, Laveran, Hansen, Manson, Kitasato, Bruce, Sanarelli; but a great deal more remains to be done. The establishment of a School of Tropical Medicine in London in 1899 marked an important step in the right direction.

It is true that artificial adaptation to new climatic conditions is not real acclimatization, but it aids materially in bringing about that result. Time is necessary in order that the organic changes may take place through which true acclimatization is attained. Life and health must be preserved until this organic process is complete. The task for the future is to study means and

¹ Beale, in *The Forum*, July, 1899.

conditions which may lead to a complete victory over the tropical microbes, the real enemies to be conquered. Already more than ten million white men and their descendants are settled within the tropics, laying the foundations of new and perhaps greater civilizations. It seems hardly reasonable to dispute any longer the possibility of tropical acclimatization.

NOTES ON THE KEKCHÍ LANGUAGE

By ROBERT BURKITT

1. THE ALPHABET

The Kekchí vowels are the same as in Spanish; they are distinctly uttered, whether accented or not.

b at the end of words is pronounced surd; e. g., *rib*, 'himself,' sounds much like the English 'reap,' ending in *p*. *b* never resembles *v*, as it may in Spanish.

h aspirates the vowel following, as in English.

In terminating a vowel sound Kekchí sometimes applies a catch produced by closing the vocal cords. This catch should rightly be represented by a letter—a silent consonant written after the vowel. Failing a suitable letter I write a dieresis over the vowel: *lí*, 'there'; *stí*, 'firewood'; *há*, 'water'; *káib*, 'two.' The vowel itself is in no way altered; it may be indefinitely prolonged, as in crying '*Haa*....*a*,' '*Waa*....*ter*,' but the end is sudden.

The catch is a mark of certain inflections; it also distinguishes some words from others, as *na*, 'mother,' from *na*, 'perhaps'; *pó*, 'rot,' from *pó*, 'moon.' In tracing the kinship of words it has the perpetuity of a consonant: *ké*, 'grind,' is allied to *ká*, 'grinding-stone,' 'molar tooth.' The vowel may vary, but the catch remains. The catch, when possible, ends its own syllable: *ké-leh*, 'mill'; *ká-bej*, 'two days hence.' Otherwise it is obscured.

j is pronounced as in Spanish: the guttural *ch* as in the Scotch *loch*.

g as in Spanish *agua*, English *go*.

k as in English.

q, a velar *k*: *gwang at*, 'be thou present,' is distinct from *gwank at*, 'thou art present.'

l is employed to express the fortis of *k* (somewhat as in English *click*), *p*, *q*, *r* (as in Spanish *burro*), and *t*. The character determines the difference between such words as *kam*, 'die,' *k'am*, 'take'; *pan*, 'toucan,' *p'an*, 'drug'; *qe*, 'ours,' *q'le*, 'time'; *jít*, 'accuse,' *jít!*, 'tighten'; *paq*, 'drown,' *paq!*, 'splash.'

n before a palatal becomes nazalized as in English *bank*, Spanish *zanja*: Kekchi *k'anjel*, 'work'; *kenq!*, 'bean.' Before *b* or *p*, *n* is often changed to *m*: *lan*, 'wrap'; *lambal*, 'wrapper.'

w as in English.

x as *sh* in English; thus, *tx* is pronounced as *tch* in English *match*.

y as *y* in English *yet*, usually with a vowel on one side or the other. In Carchá it slips into something like *x*; but Cabán turns it more to the semivowel *y* (or *i*) of English *toy*, Spanish *rey*, etc.

II. EXAMPLES OF WRITTEN INDIAN

The following is a prayer to the Earth, before sowing. The translation is as literal as English grammar allows:

At loq! laj Tsul, loq! laj Taq!a,
nak ul in q!et gwib rubel a gwoq,
rubel a gwoq!, txi ru li loq! laj
kutan loq! laj saqain, li n' in t'sama
gwí sailal xt!xol jun mul áq ká mul
áq l' in gwa li gwuk!á, txi ru l' a
t!xot!xel a sululil.

At loq! laj Tsul-taq!a, xxēnil
xtonal li rutx-i-t!xot!x, n' in t!sama
ma jun ta-xaq l' a gwalq! txi t!xcoq
re jun mul áq l' in gwa li gwuk!á
txi ru l' a t!xot!xel l' a sululil.

At l' in ná l' in yugwá, n' in t!sa-
ma gwí txik dt tx' a gwa, naq tx' a
gwošbtesi tá li gwawim in gwa
gwuk!á; naq s' a gwoq s' a gwoq!
ta txalq sailal-t!xol li rilbal in
kutan.

Thou holy Hill, holy Valley, I
come and bow myself beneath thy
feet, beneath thy hands, in eye of
the holy day and holy light, in
the which I beg health for one or
two plants of my food and drink,
on the face of thy earth and mud.

Thou holy 'Hill-valley,' root
and trunk of the world, I beg that
none of thy creatures may touch
a single plant of my food and
drink on the face of thy earth and
mud.

Thou, my mother my father, I
beg furthermore of thee, that thou
mayest bless what I sow for my
food and drink; as from thy feet
and hands shall come health for
seeing out my days.

Notes

loq!, 'holy': costly, dear, worthy, goodly, highly-esteemed, holy. The root is the same in the word *loq!*, 'buy.'

a t!xot!xel a sulul!; the endings *-el* and *-il* imply 'thy constituent earth and mud.' So elsewhere.

Tsul-taq!a; this compound is also used as a common noun, in the sense of 'landscape,' the complex of hill and valley.

gwalq!, 'creatures'; properly 'cattle'; pigs, turkeys, etc., kept by man. The wild animals are represented as 'cattle' of the *Tsul-taq!a*.

At l' in nā l' in yugwā; a common address to any superior.

osobtes!, 'bless'; the primary meaning is 'bring to completion'; like that of our verb 'perfect.'

s' a gwoq s' a gwuq!, 'from thy feet and hands'; an example of archaic circumlocution. In common language it would simply be *a gwik!in*, 'from thee.'

There is no set form for such prayers. The following is a longer variant, from another Indian:

At loq! laj Tsul-taq!a; gwank
in rubel a gwoq a gwuq!; xin
txal sā l' a tsulul a taq!aal txi
xt!samankil tx' a gwe tx' a gwu, ā
aj ban li xanimal a gwankil, naq
tx' a banu tā l' a gwusilal a putu-
nil sā in been; tx' a banu gwe l' a
kial, jō gwi l' a txabilal a kial
gwe. Tx' in a gwuxtana tā, tx' in
a temq!a tā, riklin li bar! gwan
na yola sā in t!xol.

Ma tā ra, ma tā t!xāaj tx' a
gwek!a, riklin li t' in banu sā a
been.

Tx' a kle tā jun āq in naaj,
riklin naq t' in turluba; rik!
in xyokbal xk!alenkil li loq! laj

Thou holy 'Hill-valley'; I am
beneath thy feet and hands; I
have betaken myself to thy heights
and hollows to beg of thee, be-
cause of the greatness of thy con-
dition, that thou mayest do thy
favor and kindness upon me; per-
form for me thy might, also thy
goodness and sweetness for me.
Do thou be merciful to me and
aid me, respecting whatever arises
in my mind.

May no pain, no annoyance be
felt by thee, from what I shall do
upon thee.

Do thou give me a place, with
a view to my laying it bare;
with chopping and clearing the

klitxē jō gwi li loq! laj pim ; ā
aj ban re l' in kethal txi rutx a
t!xot!x āin.

Ta gwaj ūt xyobtesinkil rawbal,
sā l' a t!xot!x a sululel, l' in gwa
gwuk!ā. Txi elq txi txabil. Txi
gwanq tā loq! laj alab, loq! laj
agwimq. Ink!ā tā txi xmausila
ēb li xxulel ēb l' a tsulul a taq!aal.
Tx' in mol!ka ta-gwi, txi ma ra,
txi ma loq!, li gwagwimq, sā tā l'
a k!abā.

Gwank in ūt ; t' in q!et gwib
tx' a gwi ; gwaē ūt l' in mayej, li
gwut!sūuj l' in pom, t' in xaqab sā
xbeen l' a t!xot!xel a sululel ; re-
talil xsununkil li usilal tx' a banu
gwe, aj ban naq a loq!il a yuamil.

Ma klā tā tx' in k!ul sā l' a mu-
hebal a kli-txēbal. T' in t!sama
ūt tx' a gwi, txi antxal in t!xol,
naq tx' a k!e tā li kawilal gwoq
gwuq! ; jō gwi l' in musiql. Xin
a gwil tā, xin a kaya tā, sā l' in
rail tiqob ; xa k!e tā xñimal in
t!xol, t' in t!sama tx' a gwi, at in
nā in yugwā.

worshipful forest and the worship-
ful bush ; to the end of my main-
tenance on the face of this earth.

And I desire the production and
sowing, in thy earth and mud, of
my food and drink. Let it turn
out good. May there be goodly
buds, goodly plants. May they
not be injured by the animals of
thy heights and hollows. And
may I gather, without pain or cost,
my crop, in thy name.

And here I am ; I bow myself
before thee ; and lo, here my of-
fering, my candle, my incense,
that I set up and leave upon thy
earth and mud ; its fragrance a
sign of the favor thou shalt do me,
by reason of thy virtue and life.

May nothing befall me in thy
shady places and forest places.
And I beg of thee, with all my
heart, that thou mayest give me
vigor of foot and hand ; also my
breath. Mightest thou see me,
mightest thou regard me, in my
sore sweat ; mightest thou give
me stoutness of heart, I beg of
thee, thou my mother, my father.

Notes

txi xt!samankil tx' a gwe tx' a gwe, 'to beg of thee' ; lit-
erally, 'to beg to thy mouth to thy face.' Ordinary speech
would omit *tx' a gwe*.

a gwusilal, 'thy favor,' or 'goodness.' *us* is good, to some
end, or toward somebody ; *txabil*, good intrinsically.

k!ial, 'might,' or 'grandeur.' *k!ial* is the "appertaining"
form of *k/i*, grown, great, enlarged, 'heaps,' etc. Appertaining
forms are frequently translatable by an English abstract ; as here,
'might.'

yola, 'arises'; or 'starts into existence,' 'is born.' *yola*, middle voice of *yoob*, 'set going,' etc.; from the root *yo*.

rik/in, 'respecting'; sometimes, 'with a view to'; generally, 'with' or 'at.' The fundamental sense of */ik/in* is best rendered by the French *chez*.

in ketbal, 'my maintenance': *ket*, 'strike'; idiomatically, 'maintain.'

rutx, 'face of.' */utx*, obsolescent form of */u*.

a(g)winq, 'plants,' 'crops,' that which is planted. From the root *aw*, sow, plant.

xulel, 'animals of'; the "appertaining" form implies 'animal denizens of,' 'fauna.'

The following are the words of a curse:

Sā xklabā l' aj oxlaju xukub, oxlaju tsul-taq'a, jō gwt li Klax-tok!;

Txi xjunil ēb li xul gwank ēb xmay; klanti, ik!xux, txakbolay, hom, kaqgwāl, klambolay, rax-klaj, q'an-ixiij; multajenaq tā, tx' eb xmolob rib txi xjunil li xmay ēb. Aq li k'lopopō, kaq-tuhuy, teken, txi xjunil xtepalil ēb li sank; tx' eb xmoloban tā rib, txi xjunil l' aj may, txi xbeen a tseqbetal gwinq aj — — —; sā tā li xbeenik; li xgwa ruk!ā; txi xotkloq tā; sā ūt xgwar!inik xk!a-mē tā ban l' Aj-tsa:

T' in tiw a tixotlx ām. Txi ya-lōq tā li t' in banu sā xbeen; txi kehōq txi osōq sā xbeen; atlsamirq tā txi xjunil k!l gwank re; ā tā li Klaxtok! txi iloq re. Kaaj āan t' in ye. Txi txupq txi osōq li xyuam.

In the name of him of thirteen horns, of thirteen hills and valleys, and of the Devil:

All the animals that have poison; snakes, (as) *ik!xux, txakbolay hom, kaqgwāl, klambolay, raxk!aj, q'an-ixiij*; be they assembled, let all their poisons collect themselves. Also the toad, *kaq-tuhuy, teken*, the whole category of ants; may they collect themselves, all that have poison, upon that hateful man — — —; be it in his walks; in his food and drink; may he be choked; and in his slumbers might he be taken by the enemy:

(For that) I bite this earth. What I am doing upon him may it come true; be it past and finished upon him; may everything that is his turn salt; may the Devil see to it. Only that shall I say. Let his life be quenched and ended.

Notes

ik!xux . . . q!an-ixiij; certain snakes, for which I have no English names.

kaq-tuhuy, taken; certain ants, for which I have no English names.

tepalil, 'category,' or 'inclusion,' from *tép*, 'field,' 'precinct,' 'area.' *Txi xjunil xtepalil* is just the translation of Milton's 'total kind of':

". . . as when the total kind
Of birds, in orderly array on wing," etc.
(*Parad. Lost*, Bk. vi.)

t!seqbetal, 'hateful,' or 'despicable'; ultimately from *t!seq*, 'cast away,' 'pitch out.' A place where filth and refuse were thrown would be a *t!seqbetal*.

aj — — —; here the victim's name is to be mentioned.

xoth!og, 'be choked'; by something in the throat, not round the neck.

xk!amè td, 'might he be taken.' The perfect (*x*), with *td*, is equivalent to the Spanish "imperfect subjunctive"; '¡ Ojalá que fuera cojido!'

I' Aj-tsa, 'the Enemy'; or, loosely, 'the Devil.'

T' in tiw; here the speaker gets down and bites the ground.

yaloq, 'come true,' or 'be realized'; from *yál*, 'true,' 'real.'

li t' in bann, 'what I am doing'; not these imprecations only, but also the accompanying magic; as going three times round the victim's house; burying a candle head-down in the direction of the door; burying images of beeswax, stuck full of thorns; etc.

kehög, 'be past,' literally 'grow cold,' i. e., be utterly over and done. *këhō*, Carchá for *këō*, with intrusive *h*. *kë*, cold.

at!samirg, 'turn salt,'—formed like *memir*, 'turn dumb'; *yajer*, 'fall sick'; etc. The inceptive ending in *r* is less usual than that in *ō*, seen in *këō*, just above.

Klaxtokl, 'Devil'; doubtless the name of some once dreaded deity. Curiously, as in other languages, there is a frequent avoidance of the full name; as in the common asseveration 'Na xnaw li *Klax*, 'The Deuce knows it' (i. e., it is positively true).

'Only that shall I say,' i. e., 'I shall say no more.'

The following is a sample of the quaint language of medicine talk. The doctor speaks to the sickness, or to the evil principle of it:

Gwalal t!xin li bolay, nim li bolay, gwank in k!i, gwank in may; āin l' aj nā, āin l' aj gwā, naq t' in txup xxamlel a gwe, xxamlel a gwu, naq t' in satx a k!i a may.	Son of mine is the small <i>bolay</i> and the great <i>bolay</i> , I have power, I have poison; I am thy mother, I am thy father, [one of authority] to quench thy fires, to extinguish thy fires, to annul thy power and thy poison.
Bar! xat sia, bar! xat yola?	Where wast thou begotten, where wast thou born?
Rubel li saq i palaw, rax i palaw. Bar! pē xa taw kat!xin a k!i, kat! xin a may?	Under the white sea, the blue sea. Where gottest thou thy little power, thy little poison?
Sā xjukub xbalam-ke.	In the canoe of the demon of the cold.
Āin l' aj nā, āin l' aj gwā, naq t' in tuqub a gwe, t' in tuqub a gwu, naq t' in txup xxamlel a gwe, xxamlel a gwu, naq t' in satx a k!i a may.	I am thy mother, I am thy father, to still thee, to quiet thee, to quench the fire that is thine, the fire that is thine, to destroy thy power and thy poison.
Jun raxal tsul, jun raxal taq!a!	A green hill, a green valley [I in- voke]!
Kat!xin xk!i l' a gwe, kat!xin xk!i l' a gwu, t' in tōon txaq. Oxlaju tx' ajgwal roq i hā!	a little of thy might, a little of thy power, shall I borrow. Thirteen potent water courses! [I invoke them]

txupbal xxamlei a gwe,
 txupbal xxamlei a gwu,
 sã loq! laj kutan, sã loq! laj sa-
 qink,
 naq t' in tseq a kfi a may.

Oxlaju tsul, oxlaju taqla!
 Arlan txal xmay a gwe, xmay a
 gwu,
 txi ru jun tx' ajgwal palaw;
 ta gwap a gwe, ta gwap a gwu,

 txi oxlaju tsul, txi oxlaju taqla,

 tx' ajgwal kik!, tx' ajgwal qlan-hã,

 t' in txup xxamlei a gwe, xxamlei
 a gwu,
 t' in satx a kfi a may.

to quench the fires of thee,
 to quench the fires of thine,
 in the holy day, in the holy time-
 of-light,
 that I cast out thy power and thy
 poison.

Thirteen hills, thirteen valleys!
 Thence cometh thy poison, thy
 poison,
 over a mighty sea;
 I blow in thy mouth, I blow in thy
 face,
 with thirteen hills, with thirteen
 valleys,
 with potent blood, with potent
 'lymph,'
 I quench thy fires, I extinguish
 thy fires,
 I annihilate thy power and thy
 poison.

Notes

'Son of mine,' etc. The doctor gives an alarming account of himself; the most deadly snakes are his children; he has formidable attributes, and warns the sickness that he is more than a match for it.

t/xin li bolay, nim li bolay; modern speech would say 'txin a bolay, nim la bolay.' *T/xin* and *nim* are among the few common adjectives which retain the primitive "predicate-subject" form of words, even when not really predicates, but attributes; most words used attributively have an "attributive inflexion," the débris of the original article or similar word (*li, i, la, a*, etc.); but with *t/xin* and *nim* the form of the article persists, though its meaning is gone. Kekchi shows plainly, in various ways, that the "attributive" relation was not an independent device, but was evolved from the "predicate" relation.

bolay. In the modern language *bolay* is not found as a defi-

nite word, but only in composition, in the names of half a dozen snakes, of which the largest and most dreaded is the *ik!-bolay*, Sp. *vibora*.

gwank, in Cobán, would be 'gwan'; 'there is my power,' etc.; French *il-y-a*.

may, 'poison,' especially the venom of snakes, scorpions, ants, etc.

ain, 'I'; identical in form with *ain*, 'this.' *Āin*, *āat*, etc., are "intensive" pronouns, not to be confounded with the usual emphatic pronouns *lain*, *laat*, etc. The former begin with the intensive particle *ā*; the latter with an obsolete form (*la*) of the article.

I aj na . . . I' aj gwa, 'thy mother, thy father'; i. e., I have authority over thee. Cajabón style, for *I' a nā*, *I' a yugwā*, of Cobán and Carchá.

xxamlel a gwa, *xxamlel a gwu*; literally, 'fire of thy mouth, fire of thy face.' In archaic language, 'face' and 'mouth' are taken to describe the person, and make a sort of double pronoun. As English has no two ways of saying 'thee,' etc., I attempt to render the Indian repetition by varying the English verb 'quench,' and 'extinguish,' and so elsewhere.

xamlel, 'fire proper to' (thee) — "appertaining" form of *xaml*, 'fire.'

satx, 'annul,' or 'destroy,' 'ruin,' 'annihilate,' 'cancel.' The prime meaning of *satx* is 'lose'; or 'be lost,' 'perish'; '*naq t' in satx*,' literally 'when I shall annul.'

'Where wast thou begotten,' etc. The sickness is further overawed. Its antecedents are shown to be no mystery to the doctor; he disparages its powers and repeats his threats.

Bar! xat sia; more literally 'where hast thou been begotten.' Kekchí, like French, is partial to the perfect, frequently using it where English prefers the aorist, 'wast.' So elsewhere. The form *sia* is middle, as well as active. The active substantive

(answering to our "infinitive") is *siank*; regular. It should be said that *sia*, in precise language, would refer to a female progenitor, and might be rendered 'conceived.'

palaw, 'sea'; or any very large lake. The word curiously resembles the Latin *palus*. 'White sea, blue sea'; not two seas, but two descriptions of it. So Homer speaks of the sea as hoary and also wine-colored.

pē. This untranslatable particle gives a very conversational air to the question.

balam, 'demon,' 'presiding genius;' Latin *numen*. The principle of the sickness comes from a magic sea in a magical canoe.

t' in tuqub a gwe, *t' in tuqub a gwu*; in ordinary language it would be *t' at in tuqub*, 'I shall quiet thee.' See note to *xxamlet a gwe*, etc., p. 449.

A green hill, a green valley, etc. The doctor calls on the deities of the hills and streams; turning again to the sickness, in the last four lines.

Oxlaju. Thirteen is a favorite number in medicine-talk.

ajgwal, 'potent,' or 'lordly.' The Almighty is also usually described as '*Nim ajgwal*'; but otherwise the word is not current.

loq!, 'holy.' These medical rites are sacred in a way, and give something of that character to the time of their performance. (See note, p. 443.)

Thirteen hills, thirteen valleys, etc. Again the doctor calls upon the name of the *Tsul-taq'a* (represented as a godhead of thirteen), being the prime source of all mysterious powers; from thence, too, the sickness has come, by way of the sea, already mentioned. The thirteen hills enter into the doctor, and with their magical fluids of life he breathes on the sickness and annihilates it.

txi ru, 'over,' or 'along the face of.'

gwap, apocopated from *gwapu*, like *ban* for *banu* ('do'); *apu*, 'blow.'

la gwap a gwe, la gwap a gwu; here the doctor actually blows on the patient's body. Sometimes, as here, the literal translation 'mouth' and 'face' may be tolerated, though the expression means simply 'I blow on thee'; in modern phrase, *t' at gwapu*.

kik! . . . *q'an-hā*, 'blood' . . . 'lymph'; *q'an-hā*, literally, 'yellow-water.' These are the two bodily fluids recognized in medicine-talk.

Again, the doctor sometimes feels the patient's pulse, and talks to the vein:

Ratinankil a gwe, ratinankil a gwu,

gwalal tlixin la itlx, nim la itlx,
k'ā xa k'lul, k'ā xa tōon?

K'ā xat sumenk?

Ye! ajgwal kik!, ajgwal q'an-hā!

Ye txaq!

B' a muq a gwib, b' a balab a gwib,
naq na gwatina a gwe, na gwatina
a gwu,

sā loq! laj kntan, sā loq! laj sa-
qink,

naq t' in satx a k'ā a may.

Ink!ā xa naw bar! xin txal,

xin yokbak txaq:

Oxlaju tsul, oxlaju taq!a!

naq na 'n txap a gwe, na 'n txap a
gwu,

etc.

Speaking unto thee, speaking unto
thee,

lesser vein, or greater vein, my son,
what has befallen thee, what (harm)
hast thou borrowed?

How answerest thou?

Tell it! mighty blood, mighty
lymph!

Out with it!

Hide not thyself, seek no ambush,
when I speak to thee, when I speak
to thy face,

in the holy day, in the holy time-
of-light,

that I destroy thy power and thy
poison.

Thou knowest not whence I am
come,

(nor where) I have passed:

Thirteen hills, thirteen valleys! [I
invoke]

as I seize thee, as I seize thee,
etc.

Selections like the foregoing may please the antiquary; and no pains have been spared to make the text right. But such

pieces are not samples of the language any more than nursery rhymes, perhaps, would be samples of current English.

For the better observation of Kekchi in continued discourse, the writer caused translations to be made from Spanish books. The following paragraphs are part of a treatise on tobacco-planting; translated by the most competent of Indians, Tiburcio Caal, of Cobán. His language is not a slavish imitation of the Spanish, and not so wordy. But attention to the Indian will show that nothing is lost.

Falbanaj.

Us tá na kli na yú li may txi ru
txi xjunil éb li t!xot!x, kaj án li
t!saqal t!saqal xt!xot!xel ā li rax
t!xot!x, poq t!xot!x, jō na gwan
gwi kat!xin āq gwakab t!xot!x.

Lí awk na-ux sā txaqi t!xot!x,
t!xot!xo naq jun gwa káj na
t!xotman; ā út li na awman sā
rax t!xot!x, nāno naq kā gwa, ox
gwa, na t!xotē, gwi na awman sā li
t!saqal xkutankil.

Lí naajej bar! ta uxq gwi li awk,
junxil āj na txamōbr!esiman ru-
qlinkil; ut naq na xk!e rib xpo-
qlenkil, na etxaniman li qlaxal
xninqal k!utul rib q!een jō li sik!b!l
ru may na el sā *Tabasco*, qlaxom
ru li numtajenaq txaqlal pay na el
sā xyi-hā-t!xot!x *Cuba*.

Lí awk na k!eman txi tsol;
gwan xkāb *vara* gwi út ōob k!utub
be na kana; ut na k!eman oxib
k!utub xyank li junq ton, bar!
xq!em t!xot!x; bar! ink!l, kāib
k!utub t!saqal.

Trasplante.

Aunque el tabaco crece en todos los terrenos, sin embargo las tierras mas apropiadas son las húmedas, suaves, y que contengan al propio tiempo una pequeña cantidad de barro.

Las siembras que se hacen en los terrenos secos, por lo regular no producen mas que un solo corte; mientras que en lugares húmedos, por lo común, se logran dos ó tres; siempre que se practiquen las siembras en sus fechas apropiadas.

El terreno que se va á sembrar debe removerse profundamente de antemano; y cuando se le puede majalear, se obtendrá una hoja tan lucida y desarrollada como la del distinguido tabaco de Tabasco, competidor de las mejores calidades de la isla de Cuba.

La siembra se practica por surcos, de vara y media, ó vara y cuarta de calle, por tres cuartas de espacio entre mata y mata, en los terrenos muy feraces, y de media vara en los menos feraces.

Maj! áq tiklaaq li awk, na hopman li xjulel txi kok! q'esnal txé, gwan rox min xtxamal, na k'eman txi ru li rinrokil k'lam k'utul re li xtsolam.

Na ru xtikihankil li awk naq na gulak lajeeb gwi káblaju xxaq. li muun, jö xjalmutx jun txi nim la tumin *peso* ru. Áin na ru xbanunkil jö naq yo li háb; gwi út ink'lá yo, na ru xkanajik re roibeninkil naq tá kubeeq moqon.

Gwi na kana txi butfbil xton li agwimq ólaju kutan junxil áj txi ru xraqik li háb, na tikla txi kliik txi xhelbal rib sa xgwankil li xtxu-ke na kube txi ru li q'loq'yoin.

Nabal xyalal sá li awk txi klemanq xxé li agwimq jun tik na ilok taqla; re bi út áan, txi muqmanq raj ton toj txi gulaq jun pak'al li xbeen káib txi xaq; toj jö náq txi kelomanq kat'xin áq tageq, txi nat'manq út txi us rikin uq'ej.

Ká-agwink.

Kahib óob áq kutan xnumik li awk na il man jar! ton ná x kam, re xká-agwinkil txi tsol raj tsol.

Us tá txan ru na t'xolaníman li muun, ink'lá na moq txi jun-taq-et; tento xbanunkil, jö sá li awk, jö sá li ká-agwib, gwi jun ka-xukut, gwi út jun *manzana*, txi awmanq muun jun áj xtxamal.

Antes de comenzar la siembra, se practican con estaca los agujeros, dándoles dos y media pulgada de profundidad, sobre un cordel que designe las líneas de los surcos.

La siembra se puede comenzar desde que el almacigo tiene de diez á doce hojas, cuyo vuelo contiene entonces el diámetro de la moneda de un peso fuerte; procurando hacer esta operación en los días de lluvias, y suspendiéndola en los que no llueva, para proseguirla al volver las aguas.

En quedando calzada la siembra quince días antes que se retiren las lluvias la planta continúa su desarrollo á merced del sereno de las noches.

Es muy interesante en la siembra el que la raíz quede perfectamente recta hacia abajo; para lo cual, se enterrará toda mata un poco mas de las dos primeras hojas, dándole un pequeño jalón en seguidas hacia arriba, y amacizándola fuertemente con las manos.

Resiembra.

Después de los cuatro ó cinco días posteriores á la siembra, se pueden reconocer ya todas las matas que hayan muerto, para practicar la resiembra surco por surco.

Como, á pesar de cualquier esmero, los almacigos nacen desaparejos, deberá procurarse, tanto en la siembra como en la resiembra, que las cuadras, ó manzanas, se practiquen con almacigo de igual tamaño.

Aqlink.

Txalen sã li awk tixto sã li sik!ok, na ru raqlinkil li agwimq, jō txi sã, jō txi xklatq, re naq b' e' tam li motsō; junes li may txi klamoq xgwankil li tixot!x, jō gwi txi xmusiqla xgwankil li iq!

Gwan tixot!x bar! kã gwa kãj na ux gwi li aqlink; ut li t!saqal tixot!xo txi xtepal na raj oxib raqlinal, ramro kahib ūt gwi tixik sã jun tenel.

But!baton.

Txi rix li xbeen aqlin, sã xk!ebal li xk!-numik, na but!man xton li agwimq, ã yal gwi txi xjunqal, gwi ūt txi tsol.

Kapunink.

Naq na gutak kãblaju gwi kalaju xtxabil xaq txi xjunil, sã jumpat na ru xkapuninkil.

Gwi gwan xtonal qlaxal lub. klam-k!i eb, kaj gwi rusk!ul gwaq-xaqib xxaq na ru xkanabankil; ut li t!saqal yal-klam-k!i lajeeb aj na kanabaman; kãblaju re li num-tajenaq klam-k!i.

Gwi na kanabaman bay-us xxaq li junq ton, jun-taq-et aj gwi na xik elq sã li xplisbal, ã ban ink!ã ninq, txi mako txabil.

Isink metsō.

Txi xjar!-payil ru li pepem gwan, ma jun ãq us re li may, ban ãan nak eb molbek nak eb xk!ula li xt!seqom txi ru eb li xxaq;

Limpia (i. e., Hoeing, etc.).

Desde la siembra hasta la cosecha, debe mantenerse limpia la sementera y sus inmediaciones; para evitar la abundancia del gusano; y que solamente el tabaco aproveche los elementos de la tierra y de la atmósfera.

En algunos terrenos bastan solamente dos limpiezas; más en la jeneralidad se requieren tres 'raspados,' y en algunos pocos, cuatro.

Calza (Earthing up).

Después de la primera limpia, y al practicarse la segunda, debe calzarse la plantación, ya sea a cada mata de por sí, ó bien llevandola por surcos.

Descogollado (Topping).

Teniendo ya todas las matas de doce a catorce hojas buenas, debe entonces practicarse el descogollado.

A las matas endebles se les dejan ocho hojas solamente; a las medianas diez; y a las mas robustas doce.

Cuando se deja a las matas mayor numero de hojas, producen el mismo resultado final de peso, pero se tienen hojas de poco desarrollo y lucimiento.

Desgusanado.

Toda clase de mariposa es nociva al tabaco, por cuanto que ella deposita en sus hojas los óvulos de las larvas, que naciendo con

jumpat nak eb moq, nak eb lok kutan, nak eb tsakan txi ru xxaq li may.

Txan tá ru yo txapbal li pepem rajlal kutan, gwan gwi txik kli la tixol re qloq'yoin; jök an naq ink!ä na ru xkanajik jum kutan äq rilbal xmotsöl, jö rajlal tsol, jö rajlal ton.

Naq na tam li qloq'yoinil pepem, jö gwi li pompor!l sä li agwimq, us xk!ebal nabal aq xam txi ru qloq'yin, txi xjunil sä li awbil, re naq arlan tx' ul eb kamq txi xtepäl eb li pepem.

Lí raxjoin rix motsö, 'primavera' xk!abä, äan li qlaxal na xk!e rib txapbal, ban jun elik gwan txi xkutankil, jö txi xsal, jö txi ru li may.

Ut li xkäh motsö, gwan jun xukub txi xpekem, mako num rax tá rix, 'cogollero' xk!abä, jun elik na tawman sä xt!sunt!sunuuj li may, bar! na xkable na xhop gwi li rotxotx.

Eb li yal saqtuxin rix motsö, yobtesimbil xban eb li pompor!l pepem, ink!ä nabal nak eb xk!ut rib txi kutan jö tá txi ru qloq'yin, ban nak eb xmuq rib sä tixotix naq na el li saq!e.

Jun txi gwinq na ru na molklank re li pepem jö gwi li motsö, sä xk!apak!al tsol, jun tsol txi xnim uq!, jö gwi jun tsol txi xt!se.

etc.

mucha violencia se alimentan y viven á espensas de las hojas del tabaco.

Mas como á pesar de todo el cuidado que puede tenerse por perseguir las mariposas, las hay nocturnas y de muchas variedades; es indispensable la operación del desgusanado diario, surco por surco y mata por mata.

Cuando la mariposa nocturna abunda, es conveniente distribuir bastantes lumbres por las noches en la plantación, en las cuales vienen á morir cantidades de mariposas.

El gusano llamado 'primavera,' de un color verde esmeralda, es mas fácil de cojer; pues siempre se encuentra visible por cualquier parte de la planta.

El 'cogollero,' de un color verde mas claro, con un cuerno en la frente, se encuentra siempre en el propio cogollo de la mata, donde labra su agujero de habitación.

Los gusanos de color gris, procedentes de las mariposas nocturnas, muy pocas veces se les encuentra de dia, como por la noche, y se esconden en la tierra á la salida del sol.

Una sola persona puede llevar la colecta de mariposas, y el desgusanado, en dos surcos á la vez, por derecha é izquierda.

etc.

The vocabulary of Kekchí is abundant. The expression is clear, rapid, and versatile. For dealing with matters of fact, the

language of the Indians suffers little by European comparison; it is much their most respectable monument.

III. TWO LOST NUMERALS

The words for counting from one to twenty are as follows:

1, *jun*; 2, *kāib* (originally, *kāibi*); 3, *oxib*; 4, *kāib*; 5, *oob*; 6, *gwaqib*; 7, *gwugub*; 8, *gwaqxaqib*; 9, *beleeb*; 10, *lajeeb*; 11, *junlaju*; 12, *kāblaju*; 13, *oxlaju*; 14, *kālaju*; 15, *ōlaju*; 16, *gwaqlaju*; 17, *gwuqlaju*; 18, *gwaqxaqlaju*; 19, *belelaju*; 20, *jun-may*.

The word *may* means tobacco, which is always made into parcels of twenty leaves. Hence the term *jun-may*, 'one score.'

Counting goes on by scores; but the name *may* is replaced by *k'āl*; *kā-k'āl*, second score (40); *ox-k'āl*, third score (60); *kā-k'āl*, fourth score (80); *ō-k'āl*, fifth score (100); *belelaju k'āl*, nineteenth score (380). For twentieth score the name is not *jun-may k'āl*, but *jun oq'ob*, 'one 400'; and successive periods of 400 give the series: *kāib oq'ob*, 2×400 ; *oxib oq'ob*, 3×400 ; *belelaju oq'ob*, 19×400 ; *jun-may oq'ob*, 20×400 (8000); and so onward indefinitely in the modern language, the *oq'ob* begin the highest unit extant.

But higher units there once were; at least so it appears from a Kekchi manuscript found a few years ago by the present writer in the sequestered village of Cajabón.

The manuscript is a body of sermons, of the missionary sort, with stories from the Old Testament. It comprises seventy folio pages; but the beginning and end are missing, and the date is unknown. The author, whoever he was, preaches against idols of wood and stone, as if they were yet worshipped. The language represents the style of Cajabón, and shows many archaic forms and some words which are quite forgotten—in particular, two numerals, *txuy* and *kalab*.

Instead of saying *jun-may oq'ob*, as above, the manuscript says *jun txuy*, 'one 8000'; and the *txuy* remains the major unit

up to *belelaju txuy*, 19×8000 . And arriving at 20×8000 , the term shown is *jun kalab*, 'one 160,000.'

The scheme is obvious. European counting gives simple names to the early powers of ten, as the English 'ten,' 'hundred,' 'thousand,' and the Greek 'myriad' (the fourth power). And twenty being the base of the Indian scale, fresh names come in with fresh powers of 20: *k'āl* (or *may*), 20; *oq'ob*, 20×20 ; *txuy*, $20 \times 20 \times 20$; *kalab*, $20 \times 20 \times 20 \times 20$.

The words *k'āl* and *oq'ob* have no etymology in the language; and neither has *txuy*. *Txuy* may have been *t'xuy* (with the violent *t'*, and the vowel long or short); *chui* is the spelling of the manuscript. The word which it spells *calab* is likewise indefinite; the *c* might mean *k* or *k'*, *q* or *q'*. But calling it *k* allows a very plausible etymology.

Connected with the words *al*, 'young,' *ala*, 'bring forth,' etc., there is a word *alab*, meaning 'birth, product of birth, litter, new growth,' etc.; as in saying *Xk'ā alab āin*, 'This (is) her fourth birth.' It is easy to think that the numeral '*calab*' is *k'alab*, by contraction for *k'ā alab*, 'fourth birth,' 'fourth product'—of 20, understood.

The arithmetical reader, not versed in these languages, would fancy, from what has been seen, that a notation like the Arabic might be adapted to Indian—writing 10 for *jun-may*, 20 for *k'āl*, 30 for *ox-k'āl*, 100 for *jun-oq'ob*, and so on. The attempt fails, owing to the Indian description of intermediate numbers. To write '66' would answer to saying '3 score and 6'; but in Indian it is '6 of the fourth score.' The score mentioned is not the score behind, but that in which the remnant lies.

21 is called '1 of the second score' (*jun xk'ā k'āl*); 39 is called '19 of the second score' (*belelaju xk'ā k'āl*); 41 is called '1 of the third score' (*jun rox k'āl*); 286 is called '6 of the fifteenth score' (*gwaq'ib rōlaju k'āl*), the fifteenth score (*ōlaju k'āl*) being complete at 300. And so on. The Indian way of

speaking tells where a number lies, but without representing it as a sum of parts, as we do.

The original notion of a number, in Kekchi, is not that of an aggregate, but of a point in the stages of a series. And in fact the simplest numerals of Kekchi are found in serial expressions, answering as near as may be to our '2nd,' '3rd,' '4th,' '5th,' etc.; as may be seen above. In the terms *xkã*, *rox*, *xka*, *rõ*, the numeral forms employed are not *kã(b)ib*, *oxib*, etc., but the primitive *kã(b)*, *ox*, *kã*, *õ*. For reasons of grammar they get a certain "possessive" prefix here; *r* before a vowel, *x* before a consonant.

Passing 400, a number is said further to lie in such and such an *oglob*: 401 is '1 of the second 400' (*jun xkãb oglob*); 420 is '1 score of the second 400' (*jun-may xkãb oglob*); 425 is '5 of the second score, of the second 400' (*õõb xkã klal, xkãb oglob*); 825 is '5 of the second score, of the third 400' (*õõb xkã klal, rox oglob*).

And the Cajabón manuscript continues the method with the *txuy* and *kalab*. The highest number it mentions is *kã txuy, rõ kalab*, 'fourth 8000 of the fifth 160,000,' i. e., 672,000 — being the number of sheep taken by the Israelites after a battle (Numbers, xxxi, 32). The authorized version says 675,000. The writer of the manuscript had no care to be exact; here and elsewhere he takes an Indian round number, near enough to the mark. 675,000, exactly, would be *lajeeb klal, xgwaqxaq oglob, rõ txuy, rõ kalab*, '10 score, of the eighth 400, of the fifth 8000, of the fifth 160,000.'

With the *kalab* the way is plain for nineteen steps, ending with *belelaju kalab*, $19 \times 160,000$, or 3,040,000. The next new name we should expect would come with the fifth power of 20, or 3,200,000 — if Indian arithmetic had reached it.

IV. INDIAN SURNAMES

The Kekchi have hereditary surnames, some with a meaning in the language and some without. The latter may have a mean-

ing in some other language. It is easy to think that if lists of Central American surnames could be compared they might furnish a very substantial index to the movements and mixtures of these tribal groups.

I go on to present a collection of the surnames of the people who now speak Kekchi. Surnames, like other words, accent the last vowel. Long vowels are marked.

First, the surnames which have the sound of Kekchi words, or roots, and may be taken to have the meaning of them :

Ak', new.

Akt', Span. 'lancetillo,' a thorny palm tree.

Aqam, Span. 'cotuza,' an animal like a rabbit, but with short ears.

Asij, a sort of cicada.

Ax, a tree, valuable for its hard red wood.

Ba, Span. 'taltuza,' a sort of mole.

Bag, bone.

Bat's, monkey.—Span. 'mono.'

Gwuy, seven.

Hø, dung, filth, etc. (a word used in speaking to children ; not among grown people).

Hol, root of *holho*, bulging, sticking out (as the eyes of a frog, etc.).

Hor', root of *hor'oh*, etc., bore (a hole) through.

Ik, chile (peppers).

It's, root of *it'sib*, crack (as the sun cracks wood)—*it'so*, etc.

Ixim, Indian corn in grain.

Folom, head.

Fuk, root of *juku*, drag along.

Fukub, canoe.

Kakate, cacao.

Klanti, snake.

Kej, the large gray deer of the hot lands.

Kib, the edible part of any sort of palm, the green shoot of it.

Kil, earthen pan (for baking tortillas), Span. 'comal.'

Kim, straw ; thatch.

K'oj, mask (of wood, for the face used in various dances).

Kok, tortoise.

K'oy, chew ; (2) chewing-gum.

Kuk, squirrel.

Kum, root of *kumub*, stub, cut short, break off short (an extremity). *kumku*, stubbed, etc.—(Not *k'um*, a squash.)

Kus, root of *kusku*, round, globose, (of persons) 'potato-headed.'

Luk, root of *luklu*, hanging double, hanging over (as a snake on a stick, or a tablecloth)—*lukub*, etc.

Maqs, pumice.

Max, Span. 'mico,' a species of monkey ; (2) a weevil, in corn, etc.

May, poison ; tobacco.

Mes, wipe, scrub.

Mø, Span. 'guacamaya,' a large particolored parrot.

Ō, five.

Pan, Span. 'cucharón,' a sort of toucan.

Pap, a green bird of the hot land about the bigness of a pigeon.

Pek, stone.

Pix, knot; wart; tomato.

Pejok, 'substantive' form of *poj*, fling, fling away, fling down.
—(Not *poj*, sew.)

Pök, Span. 'miltomate,' a plant with much small fruit, used as a vegetable, like tomatoes.

Pem, roast; (2) any gum, etc., burnt as incense.

Pöp, mat, woven of straw.

Poq, name given to powdery magnesian limestone, or any similar looking deposit; (2) a tree, from which a bluish dye is had.
—(Not *poq*, disembowel.)

Q'an, yellow.

Q'een, herb, any edible or medicinal leaf, or berry.

Q'ol, bead, necklace; (2) sticky gum (exuding from trees); (3) reap (Indian corn).

Rax, green, blue (the name includes both colors).

Sakil, the seed of plants like melons, squashes, etc.

Sam, spot.

Seb, clay.—(Not *seb*, light).

Sil, sort of pumpkin, of which the shell is used as a vessel to hold tortillas.

Si, firewood.

Sis, Span. 'pisote,' a small animal, easily tamed as a pet.

Sot's, bat (the animal).

Sub, a thorn tree, with leaves like the mimosa, but not sensitive.

Tok', flint.

Tlex, slap, pat (a child, a dog, etc.).

T'salam, prison.

T'si, dog.

T'simdañ, Span. 'yerba de coche,' a grass.

Tsir', strike (fire, from a flint, etc.).

T'sub, suck; kiss.

Tsuk', stop at a stand, halt stock-still.

T'sul, plait.—(Not *tsul*, hill.)

T'suy, root of *t'suyt'su*, dried up (as fruits drying up before maturity)—*t'suyab*, etc.—middle, *t'suya*.

Tun, a hollow cylindrical wooden instrument of music.

Tux, this is the Cobán form of *tuxm*, sprout, twig.

T'xaliñ, there is a tree of this name.

Txi, tree.—(Not *t'xi*, touch).

T'xen, mosquito.

Txiq, name of a place where the forage plant, *sq*, grows.

T'xo, mouse.

Txoy, finish.

T'xub, wasp.

Txun, lime.

Xal, gap or pass (between hills); fork (of a tree, of a road), etc.

Xaq, leaf; (2) root of *xaqab*, set upright, *xaqxo*, standing, etc.

Xi, root.

Xol, flute (musical instrument).

Xoy, there is a weed of this name.

Xuk, corner, angle.

Yat, fly (insect).

Yatt, squeeze.

Yoj, root of *yofle*, or *yojob*, etc., rattle, shake together.

Only nine surnames above are identified with mere roots. The number is small, for the reason that most Kekchí roots occur also as definite words. Of course, in the foregoing list, some of the surnames may really have nothing to do with the words they simulate, but the identity is more or less plausible.

We now come to the surnames which cannot so be identified. Some of them contain no suggestion of meaning; again, like many English surnames, they may often be broken into syllables, one or more of them susceptible of meaning. And some of them are like puns. Blind and stumbling as such suggestions may be, yet to let the reader judge, I have thought it worth while to notice all that I could gather:

Agwalib.

Ak'al; *k'al*, cornfield.

Ak'alhá; *há*, water.

Amaleb.

Ayú (not *ayu* / 'go!'); *yū*, grow, lengthen.

Balew, there is a hamlet of this name, but it has no meaning.

Bin.

Bá.

Bol (not *ból*, cylinder, etc.).

Botsok (not *bot'sok*, substantive form of *bot's*, extract, pull out).

Bátx.

Esém.

Gwalib; *gwa*, food, tortilla.—/*alib*, daughter-in-law; *gwalib*, my daughter-in-law.

Gwalibat; *gwalib dt*, thou art my daughter-in-law.

Gwalna; *gwal*, my son; *na*, perhaps.

Gwegwe; *gwe*, my mouth.

Gwits.

Hub (not *jub*, fetch a blow at).

Huk (not *juk*; see last list).

Hun (not *jun*, one).

Ibaj, the names of some animals begin with *i*, as *imul*, rabbit; *iboy*, armadillo.

Ik'al; *k'al*, cornfield.

Iká; *ik*, chile; *á*, five; *ká*, sweet-heart (if used by a man), daughter (if used by a woman).

Itx (not *it'x*, vein).

Itxix.

Jalal; *jal*, change.

Jolomna; *jolom*, head; *na*, perhaps.

Kabnal; *kab*, sweet (-meat).

K'ajbom, this is also the name of the town which the Spanish, corruptly, call 'Cajabón.' *k'aj*, Indian-corn meal.

Kakinam.

K'átun, see *Tun*, last list.

Kāw (not *kāw*, hard).

K'initx, cf. *itx*, above.

K'u.

Kugwā; *gwā*, father, sir.

Kuklul; *kul*, receive; *kuklum*, feather.

Māas; *mā*, 'mister'; */as*, elder brother of.

Maktin.

Maxcua; *Max*, see last list.

Muk'u; *mu*, shadow; *muk'*, root of *muk/mu*, drooping; etc.; */u*, face of.

Oxom; *ox*, three.

Pāaw; *aw*, sow.

Pakyul; *yul*, anoint, smear.

Panā; *pan*, see last list; *nā*, mother. In compounds, *hā*, water, is often reduced to *a*; *nima* for *nim-hā*.

Paqay (not *pāhay*, a certain fruit).

Plep'.

Pñow; *pñ*, rot.

P'ulum.

Putul; *tul*, plantain.

Q'dal; *al*, young, boy.

Qlaq.

Sagut; *gut*, where.

Sakba; *ba*, see last list.

Sakul.

Saqi; *saq*, white.

Saqij.

Sagrab; */ab*, hammock; *rab*, his hammock.

Tagaj (not *Tag'aj*, Mazatenango); *ta gaj*, we desire it.

Tek.

Ten; *te*, open; *ten*, hammer.

Teyul, cf. *Pakyul* above.

Tiul.

Tlet'.

Tlox.

Tsib (not *t'sib*, root of *t'siba*, write).

T'ixboy; *boy*, genital parts of the female.

Tsok' (not *tsok*, root of *tsokak*, be hungry).

Tsunhā; *tsun*, root of *tsuntu*, quiet, stealthy; *hā*, water.

Tūt.

Tupil (not connected with *tup*, break, snap).

txamam; *txa*, ashes; *txam*, deep; */mam*, grandchild of.

Txanēb.

Txen (not the *T'xen* of last list).

Txikin, begins like the name of a place, with the preposition *txi*.

Txoj.

T'xok' (not *txoq'*, cloud).

T'xokboj.

Txolom (not *t'xolom*, of *t'xol*, clear, make plain, etc.).

Txor, there is a word *txornak*, urinate with difficulty.

T'xuhun, or *t'xūn* (not *t'xun*, a certain fruit; nor *txun*, see last list).

Ukum; *kum*, see last list.—(*uk* is not *uk'*, drink.)

Ul.

Xi.

Xo, an exclamation; *Xo'* means Silence!

Xux, might be identified with *xuxb*, whistle, by dropping the final *b*.

Yalibat, cf. *Gwalibat*, above.

Yaxhal; *yax*, pincers (of crabs, etc.).

The sounds of all these surnames, and the possible meanings, in both lists, have been scrutinized by competent Indians. Each

list, as it happens, comprises 87 surnames, 174 in all. I believe my collection is nearly, if not quite, complete.

It may be added that most places in the Kekchí country have Kekchí names, frequently taken from some plant or animal about the place. But some principal town-names have no meaning:

<i>K'ajbom</i> , Cajabón (see <i>K'ajbom</i> , last list).	<i>Koban</i> , Cobán (see <i>Ihš</i> , last list).
<i>Kar'ixa</i> , Carchá (<i>kar</i> , fish; <i>ixa</i> , ashes).	<i>Lankin</i> , Lanquín (<i>lan</i> , wrap).

Dr Stoll erroneously gives *Carchá* as meaning 'fish-ashes.' If the word meant anything in Kekchí, it would be the name of some fish, 'ash-fish.' But there is no such fish.

And there is no Kekchí meaning in the names of certain venerated mountains: though spoken of with the Kekchí prefixes *mā* (old man, 'mister'), *xāan* (old woman, 'mistress'):

<i>Xāan itsam</i> , northwest of Cajabón.	<i>Mā siyab</i> , west of Senahú.
<i>Mā kojaj</i> , north of Carchá.	<i>Mā xukaneb</i> , southeast of Cobán.

A few foreign towns are known by names which are neither Kekchí nor the names adopted by the Spanish: Poqom, *Chinantla*; Taq'aj, *Masatenango*; Xelajú, *Quezaltenango*.

ANTHROPOLOGY AT PITTSBURG

By W J McGEE

The gathering of anthropologists at Pittsburg, June 28 to July 3, 1902, was of peculiar interest; for, in addition to the customary features of a well-attended meeting of the American Association for the Advancement of Science, a special organization of national character was formally founded under the title American Anthropological Association.

To workers in anthropology in this country the creation of the new society will be in no way surprising; for it is but the consummation of a movement extending over several years. After repeated stirrings, this movement took definite shape in 1896, when the recognized need was partially met and the stress relieved by a series of winter meetings of Section H (Anthropology) of the A. A. A. S. Two years later the pressure for organization was again renewed, but once more the needs of the workers were met in part by improved facilities for publication in form of the *American Anthropologist* (New Series). Despite these advances the feeling has remained strong among the leading anthropologists of the country that the dignity and importance of the science, and the number of workers engaged in its support, were such as to demand a national organization maintaining its own medium of publication; and this demand has been much discussed in both formal and informal meetings of American workers. It was in consequence of certain of these discussions and ensuing correspondence that forty of the foremost anthropologists of the country were invited to participate in the founding of the new organization at Pittsburg. Pursuant to this call, a meeting was held in Oakland Church, at 2 p. m., June 30, with

the Vice-President of Section H in the Chair. After preliminary deliberations, a constitution was formally adopted; and the meeting resolved itself into a committee to nominate and elect executive officers. Such officers were duly elected as follows:

<i>President,</i>	W J McGee,
<i>Vice-President for four years,</i>	F. W. Putnam,
" " " three years,	Franz Boas,
" " " two years,	W. H. Holmes,
" " " one year,	J. W. Powell,
<i>Secretary,</i>	George A. Dorsey,
<i>Treasurer,</i>	Roland B. Dixon,
<i>Editor,</i>	F. W. Hodge.

The judgment of the founders (expressed in correspondence as well as in discussion) favoring a Council large enough to include working anthropologists from all parts of the country, and the constitution being framed in accordance with this policy, the number of Councilors at large was fixed at twenty-four; and the following persons, all of whom except two (who chanced to be abroad) had endorsed the objects of the meeting, were elected to form, in conjunction with the executive officers, the Council of the Association: Frank Baker, Charles P. Bowditch, A. F. Chamberlain, Stewart Culin, Livingston Farrand, J. Walter Fewkes, Alice C. Fletcher, J. N. B. Hewitt, Walter Hough, Aleš Hrdlička, A. L. Kroeber, George Grant MacCurdy, O. T. Mason, Washington Matthews, J. D. McGuire, James Mooney, W. W. Newell, Frank Russell, M. H. Saville, Harlan I. Smith, Frederick Starr, John R. Swanton, Cyrus Thomas, and E. S. Wood.

For the Executive Committee provided for by the constitution the following were elected: Messrs Boas, Culin, Dorsey, Fewkes, Hodge, Holmes, MacCurdy, McGee, and Putnam. Two of the three standing committees (completed since the close of the meeting) are as follows, with the addition of the President *ex-officio*: On Program, Putnam, Boas, Holmes, Powell, Dorsey, Fewkes, and Russell; and on Publication, Hodge, Baker, Boas,

Chamberlain, Culin, Dorsey, Fletcher, Holmes, Powell, and Putnam. The Committee on Finance is not yet appointed. During the Pittsburg meeting the Association was represented in the Council of the A. A. A. S. by Professor Holmes and Dr Dorsey.

After the close of the organizing meeting there were two sessions of the Association, meeting as the Council; and during the afternoon of July 2 the Association met jointly with Section H of the A. A. A. S., for the presentation of scientific papers.

The next regular meeting of the Association will be held in Washington during the Convocation Week of 1902-'03.

The founding of the new Association is notable not only as the opening of an epoch in the development of the science in America, but as a manifestation of mutual tolerance and good will among specialists representing every department of the broad Science of Man and every section of the country. One of the most serious questions brought out during the discussion of the proposed movement during the last six months related to standards of membership, some of the prospective founders preferring to limit membership to professional workers, while others favored a policy of diffusion with election on the basis of interest in anthropology. It was with the view of holding this question in abeyance pending final discussion in the founding meeting that invitations to this meeting were limited to about forty working and teaching anthropologists; and one of the most important actions taken at Pittsburg was that providing that other anthropologists who so desire may, during the remaining months of the year, become affiliated with the Association and classed as founders. On all other issues there was substantial unanimity; so that it seems just to say that the new Association harmonizes the interests of the science in America, and unifies the aims and methods of a great science in a measure seldom attained in the creation of national scientific organizations.

The Section of Anthropology, A. A. A. S., was organized on June 30 as follows:

Vice-President, Stewart Culin.

Secretary, Harlan I. Smith.

Member of Council, W J McGee.

Sectional Committee: J. Walter Fewkes, Vice-President, 1901;

George Grant MacCurdy, Secretary, 1901; Stewart Culin and

Harlan I. Smith, *ex-officio*; Franz Boas, George A. Dorsey, W.

H. Holmes, at large.

Member of General Committee, Walter Hough.

The Council of the A. A. A. S. took action on several matters recommended by the Section. Among these were the following reports of committees and resolutions:

1. Report of Committee on the Teaching of Anthropology in America.

To the Council of the A. A. A. S.: The Committee on the Teaching of Anthropology in America beg to report the continuation of correspondence and conferences in the interests of anthropological teaching. Some of the results of the correspondence are incorporated in a paper by one of the Committee (Dr MacCurdy), entitled "The Teaching of Anthropology in the United States," published in *Science*, January, 1902. During the year a course of lectures was delivered by one of the Committee (the chairman) in the Free Museum attached to the University of Pennsylvania, pursuant to the purposes of the Committee.

The expenses of the Committee have been inconsiderable, and no appropriation is asked. It is recommended that the Committee be continued.

W J MCGEE, *Chairman*,

FRANZ BOAS,

W. H. HOLMES.

2. Report of Committee on Anthropometric Measurements.

Anthropometric researches under the auspices of this Committee have been continued during the year. Professors Cattell and Boas, members of the Committee, and Professors Thorndike and Farrand, fellows of the Association, have during the year made measurements of

students entering and graduating from Columbia College, and have made other studies on individual differences. Professor Thorndike has investigated especially the correlation of traits in school children. Mr Farrington has studied the question as to whether brothers who have attended Columbia University are more alike than those who are not brothers. Mr Bair and Dr Wissler are calculating the results of measurements of school children made by Professor Boas. Professor Cattell is collecting data on individual differences, in which 1,000 students of Columbia University, 1,000 of the most eminent men in history, and 1,000 scientific men of the United States are being considered.

Progress has been made with the construction of a traveling set of anthropometric instruments, toward which an appropriation of \$50 was made at the Denver meeting of the Association. It is believed that the model of a portable set of instruments would be of value for work in schools, for the study of primitive races, etc. The present set is the property of the Association and is to be used in the first instance in making physical and mental measurements of members. Such measurements were begun at the New York meeting, but they cannot be continued until a portable set of instruments is available and arrangements are made for assistance in carrying out the measurements. The instruments will be ready at the time of the Washington meeting, and an assistant could probably be secured to take the measurements if his traveling expenses were paid. We should be pleased if an appropriation to this Committee of \$25 or \$50 could be made for this purpose. An appropriation was made for a series of years by the British Association for its anthropometric laboratory. Our own measurements are more extended than those of the British Association, especially in the direction of mental traits; but it would be interesting to compare the measurements of the members of the British Association with similar measurements of American men of science.

J. MCK. CATTELL, *Chairman*,

W J MCGEE,

FRANZ BOAS.

3. The Committee on the Protection and Preservation of Objects of Archeological Interest (of which the late Thomas Wilson was chairman) made an informal report of progress.

4. Resolutions touching a proposed American International Archeological Commission.

WHEREAS, The Second International American Conference, commonly known as the Pan-American Congress, in session duly assembled in the City of Mexico, January 29, 1902, adopted a recommendation to the several American nations participating in the Conference, that an "American International Archeological Commission" be created;

WHEREAS, The recommendation has been transmitted by the President of the United States to the Congress (Senate Document No. 330 of the 57th Congress, 1st Session), thereby giving the project official status in the United States; and

WHEREAS, The recommendation is in full accord with the spirit and objects of American science, while international agreement in laws relating to antiquities is desirable; therefore,

Resolved, That the American Association for the Advancement of Science heartily concurs in the recommendation of the Second International American Conference.

Resolved Further, That the Secretary of the Association send a copy of this Resolution to the Director of the Bureau of American Republics, as an expression of the judgment of the Association.

The foregoing resolutions are in accord with the action of the American Anthropological Association, which adopted the following:

WHEREAS, The Second International American Conference, commonly known as the Pan-American Congress, in session duly assembled in the City of Mexico, January 29, 1902, adopted a recommendation to the several American nations participating in the Conference, that an "American International Archeological Commission" be created, to promote archeological research, to aid in the preservation of antiquities, and to endeavor to establish an American International Museum; and

WHEREAS, The recommendation is in full accord with the spirit and objects of American science; therefore,

Resolved, That the American Anthropological Association heartily concurs in the recommendation of the Second International American Conference.

Resolved Further, That the Secretary of the Association send a copy of these Resolutions to the Director of the Bureau of American Republics as an expression of the judgment of the Association.

On the recommendation of the Section the following anthropologists were elected as fellows of the A. A. A. S.: Frank W.

Blackmar, Livingston Farrand, W. H. Goodyear, A. E. Jenks, J. D. McGuire, William C. Mills, Charles L. Owen, Alton H. Thompson, and William Wallace Tooker.

The sectional officers for the ensuing meeting, elected on nomination of the sectional committee, are as follows: Vice-President, George A. Dorsey, Curator of Anthropology, Field Columbian Museum, Chicago; Secretary, Roland B. Dixon, Instructor in Anthropology, Harvard University, Cambridge.

The representatives of the Section participated freely in the meetings of the Council and General Committee of the A. A. A. S., which will hold its next ensuing meeting in Washington during the Convocation Week of 1902-'03.

Among the actions of general character taken by the Section were the appointment of a committee on the death of Dr Thomas Wilson, and the adoption of the following resolutions:

1. Memorial resolutions.

WHEREAS, The death of Dr Thomas Wilson, a former vice-president of the Association, has deprived us of one whose presence at our meetings has contributed much to their value, and has deprived prehistoric science of an indefatigable and earnest worker; in order to express our high appreciation of his worth and labor, we recommend the following resolutions:

Resolved, That in the death of Dr Thomas Wilson the Association has lost a most efficient and industrious worker in the field of prehistoric archeology, the example of whose devotion to science is worthy of emulation.

Resolved, That a copy of these resolutions be sent to his widow and family and that a second copy be placed among the records of the Section.

WARREN K. MOOREHEAD,
STEWART CULIN,
HARLAN I. SMITH,
J. WALTER FEWKES.

2. Resolution touching the American Anthropological Association.

Resolved, That it is the sense of this meeting that it is desirable to

bring about the closest possible correlation between the work of Section H of the American Association for the Advancement of Science and the American Anthropological Association.

The scientific proceedings of the meetings were of high character; and while the popular attendance was not large, the attendance of specialists and the interest and value of discussions were well above the average.

The retiring address of Vice-President Fewkes was on "Prehistoric Porto Rico." It comprised the results of recent researches undertaken by the author as an officer of the Bureau of American Ethnology, yet the theme was treated broadly in the light of all other information extant. Beginning with a summary of earlier literature and later studies up to the annexation of the island, Dr Fewkes proceeded to describe the antiquities and to interpret them by means of record and tradition as well as by analogy with the products of other Amerind tribes. Special attention was given to the so-called "collars" of carved stone, of which the author has recently collected several specimens; and extended consideration was given to the cult of the zemi, which dominated the social organization and industrial character of the Antillean aborigines. The zemi is a protean but always sacred thing, of the kind so characteristic of primitive culture—a mere stone, a carved idol, a painted device, a tattooed design, or other symbol of mystic (usually zoic) power. "Primarily the zemi . . . corresponds with the totem of the North American, and zemeism is practically another name for totemism, a form of ancestor worship." As a whole the address is by far the most satisfactory résumé of the archeology and ethnology of Porto Rico thus far prepared. It is printed in *Science*, Vol. XVI (July 18, 1892), pp. 94-109.

There were an exceptional number of papers relating to anthropology in general. Among these may be classed several communications relating to museums. Prof. W. H. Holmes outlined a system of "Classification and Arrangement of the Collections of an Anthropological Museum," the system being that

developed during Professor Holmes' administration of the anthropological department of the U. S. National Museum. The full paper, with requisite illustrations, will soon appear in the report of the Museum for 1901. Dr Walter Hough described the "Preservation of Museum Specimens," also on the basis of experience in the National Museum. Some of the devices are suitable only for museum use, while others may be employed for domestic purposes, e. g., gasoline, a weak solution of corrosive sublimate in alcohol, etc. Vice-President Culin presented an instructive "Account of Anthropological Museums and Museum Economy," based on his experience in the Free Museum of Science and Art connected with the University of Pennsylvania, together with his studies in other institutions both in this country and abroad. Dr Harlan I. Smith outlined "Methods of Collecting Anthropologic Material," with special reference to the work of the American Museum of Natural History; the conclusion reached was that casual collecting is no longer worth while, that the synoptic method may well be replaced by judicious exchange among museums, and that the research method alone is worthy of encouragement. The paper is printed in the *Wisconsin Archeologist*, Vol. 1, July, 1902. Rev. G. Frederick Wright described the "Anthropological Museums in Central Asia," calling attention to the unexpected number and excellence of these institutions, those at Vladivostok, Blagovestchensk, Khabarovsk, Irkutsk, Minusinsk, Krasnoyarsk, Yeniseisk, Tomsk, Omsk, Biisk, Tashkent, and Tiflis receiving special attention. Frederick Houghton emphasized the importance of "Coöperation between the Anthropological Museum and the Public School," based on his experience in the schools of Buffalo. Both the paper and the ensuing discussion indicate a rapidly-growing appreciation of the well arranged scientific museum as an educational instrumentality. Mr Houghton's paper will appear in an early number of the *Journal of Education*, Boston.

Another paper of general character was "The Place of An-

thropology among the Sciences," by W J McGee. The author explained the youth of the science in its modern aspects as connected with its great relative complexity. The keynote of astronomy, the earliest of the sciences, may be said to be gravity, while that of chemistry, the next oldest science, may be defined as affinity; yet since chemical relations are at least indirectly controlled by gravity, the basis of the later science is really gravity + affinity. So, too, the keynote of botany, or phytology, is vitality, yet this property of plant-matter is but superadded to the gravity and the gravity + affinity with which the two older sciences are concerned. In the realm of zoölogy, motility, or the power of self-movement, is added in turn; and in anthropology, mentality, in all its bearings on conscious self-activity, becomes the keynote—yet this distinctive property is only added to the motility, vitality, affinity, and gravity to which the leading older sciences are especially devoted.

Under the title "Explorations of 1901 in Arizona," Dr Hough gave an account of one of the most important explorations carried on during the summer of 1901 for the U. S. National Museum with the coöperation of Mr P. G. Gates. The field covered lies in eastern Arizona; sixty ruins were visited, and eighteen of these were excavated. The results comprised over three thousand specimens, plans of twenty-four pueblos, a large number of photographs, with maps, etc. The paper will be published in full in the report of the Museum for 1901.

A communication entitled "Climatic Changes in Central Asia Traced to their Probable Causes, and Discussed with Reference to their Bearings on the Early Migrations of Mankind," was presented by Rev. G. Frederick Wright and criticised by J. Walter Fewkes, J. D. McGuire, Harlan I. Smith, W J McGee, Stewart Culin, W. H. Holmes, and others.

An appreciative memorial to "The late Dr Thomas Wilson" was presented by Warren K. Moorehead, and led to the creation and report of a committee as noted above.

Somatology received due attention. Dr George Grant MacCurdy described "A Collection of Crania from Gazelle Peninsula, New Pomerania," obtained in 1894 through Frederick Mueller, of Amsterdam, and now in the Free Museum of Science and Art, Philadelphia. The skulls are small and all dolichocephalic. The minimum and-maximum frontal diameters are small, averaging, respectively, 20.3 mm. and 25.7 mm. less than for English crania. The height averages greater than the greatest breadth, a character called hypsistencephaly: the crania are prognathous, platyrrhine, platyopic, phenozygous, and megadont. Glabella and superciliary arches are prominent; apertura pyriformis is simian in character. Fossæ caninæ are pronounced. The teeth are well preserved and not crowded; the wisdom teeth are lacking in none. There is a tendency toward a division of the root in the first upper premolars. The alveolar arch of the upper jaw projects considerably beyond the third molars (in one case as much as 12 mm.). The percentage of first lower premolars with anterior roots is high; the spinal mentalis is practically wanting, and the angle of symphysis is large. The paper was illustrated by lantern pictures.

A paper under the title "Square Occipital in the Cranium of a Modern Othomi Mestizo," by Dr Nicolas León, of the Museo Nacional, Mexico, received attention. The specimen was from an ossuary at Tula Allende, State of Hidalgo, and is apparently from a symmetrically developed male of about forty years, rather confidently identified as the son of a pure-blood Othomi father and a mixed white mother. The chief peculiarity of the cranium is the geometric form of the occipital, which is nearly square. The case was offered for record as of probable use in future morphologic studies.

Another somatologic contribution was "Evanescant Congenital Pigmentation in the Sacro-Lumbar Region," by H. Newell Wardle. The paper appears in the present number of the *American Anthropologist*.

A paper on "The Growth of Children," by Dr Franz Boas, was, on the motion of the author, presented by title-only.

Except in relation to other subjects, psychology received little attention in the Section; but the subject was brought out in the leading scientific contribution to the Pittsburg meeting, i. e., the address of the retiring President, Dr Charles Sedgwick Minot, on "The Problem of Consciousness in its Biological Aspects." Although suggested chiefly by the phenomena of consciousness in lower life, the exposition was notable for its conformity with and corroboration of the now prevailing view among anthropologists concerning that fundamental property of nature which Powell discussed under "activital similarities," which Brinton styled "the unity of mind," and which has since been formulated as the *responsivity of mind*. The striking and most gratifying feature of the address was the unquestioned recognition of consciousness as a natural phenomenon, one to be viewed, measured, compared in its various manifestations, and finally discussed in rational ways and in accordance with rigorous scientific methods. The ideas were most effectively—indeed, charmingly—presented; and while mode of approach and conclusions were alike curiously repetitive of that foundation of modern science, Bacon's *Novum Organum*, the address was most timely and fitting, at once a model and a nucleus for the 320 scientific papers presented at the Pittsburg meeting.

As usual technology, including archeology, was well represented at Pittsburg. Under the title "The Human Effigy Pipe taken from the Adena Mound, Ross County, Ohio," Dr W. C. Mills described and exhibited an impressive example of aboriginal handiwork. The pipe is tubular in form, eight inches in length, and represents a human body wearing a decorated loin-cloth. The material is raw fireclay. J. Walter Fewkes, J. D. McGuire, Warren K. Moorehead, and others contributed to the discussion of the specimen. Dr Mills also exhibited "Microscopical Sections of Flint from Flint Ridge, Licking County,

Ohio," with the object of demonstrating that this material contains foramenifera which may be utilized in the identification of localities. He also described the "Burials of Adena Mound," with abundant lantern illustrations depicting the stages in the excavation of this structure. Originally the mound was 26 feet high and 445 feet in circumference, and of the usual rounded-conical form. The excavation showed that it was built at two different periods, the earlier structure being 20 feet high and 90 feet in diameter at the base, while the outline of the older and inner mound was not concentric with that of the completed structure. None of the burials in the older mound was higher than five feet above the natural surface; the remains were enveloped in bark or a coarse woven fabric, and then enclosed in rude wooden sepulchers. The burials in the newer portion of the mound were near the surface, and no traces of bark or wood were found with the skeletons, though the implements and other artifacts of the two periods were similar.

The "Gravel Kame Burials in Ohio" were described by Warren K. Moorehead, who has spent ten or twelve seasons in the exploration of Ohio antiquities. The interments were in gravel knolls probably of morainal origin, and were perhaps earlier than those within the mounds; the crania seem different from those of the artificial tumuli, and some of the artifacts are decidedly dissimilar. The author inclined to the opinion that the kame burials represent a tribe or tribes distinct from the builders of the mounds in the same region.

Under the title "The Hernandez Shell-heap, Ormond, Florida," Prof. C. H. Hitchcock presented the results of an important archeologic discovery. The shell-heap was near Ormond on the "Spanish Grant"; twenty kinds of mollusca were found, together with bones of deer, dog of two varieties, opossum, wolf, porpoise, alligator, turtle, and several species of fish, as well as human implements. The most important discovery was that of bones of the now extinct great auk (*Plautus impennis*). Two specimens

of the humerus of this species were exhibited by the author and Prof. O. P. Hay. The communication was discussed by Harlan I. Smith, J. D. McGuire, and others.

Through the courtesy of Dr W. J. Holland, Director of Carnegie Museum, Dr M. H. Saville exhibited "A Rare Form of Sculpture from Eastern Mexico" of much interest. The specimen was obtained from the Totonacan habitat within the present states of Vera Cruz and Puebla, a region yielding many of the stone "yokes," or "collars," of related symbolism. The sculpture represents a masked human figure similar to a number in the American Museum of Natural History, New York; and a striking feature emphasized by the author is the representation of snakes held in the mouths of the figures in a manner recalling the most impressive ceremony of the Hopi Indians. The specimen and its symbolism were discussed by W. H. Holmes, J. Walter Fewkes, J. D. McGuire, and Walter Hough.

Dr Harlan I. Smith made an "Exhibition of a Modern Clay Tablet from Michigan" in illustration of the type of counterfeit antiquities of which so many have been reported from northern United States during recent years. Dr E. L. Moseley exhibited "The Sandusky Engraved Slates," i. e., two small slabs of argillite, apparently designed as pendant ornaments; one was engraved with a proboscidean on one side and a coiled rattlesnake on the reverse; the other was engraved on each side with an Indian face. The history of the specimens seemed to point clearly to an aboriginal, but probably post-Columbian, origin, though the rude carving suggested the craft of the pioneer school-boy rather than that of the native artist. Dr Moseley also exhibited an interesting specimen of "Charcoal Covered by Stalagmite from Put-in-Bay," illustrating the comparative rapidity of stalagmitic growth.

A notable paper was presented by Dr George H. Pepper, under the title "The Throwing-Stick." The material described was chiefly prehistoric, and from southwestern United States. Of the

three perfect specimens known to represent the region and period, one is in the Hyde Collection, American Museum of Natural History, another in the State Collection, Salt Lake City, Utah, and the third in possession of Prof. Frederick Starr, University of Chicago; two imperfect specimens are in the Free Museum of Science and Art, Philadelphia. The author discussed both the technology and the symbolism of these throwing-sticks, instituting comparisons with the Mexican atlatl and other devices. The paper was discussed at length by Vice-President Culin, who interpreted the snake and lightning symbolism revealed through the Philadelphia specimens; by W J McGee, who explained that the hardwood foreshaft of the arrow or dart is a vestigial symbol of the animal tooth, and also that among the Seri Indians the bow is so closely connected with the atlatl that the throwing motion still persists; while J. Walter Fewkes and others contributed to the subject. The full paper is designed for publication in the *Bulletin* of the American Museum of Natural History.

Sophiology, including ceremonies, formed the subject of two or three important communications, with extended discussion. Dr George A. Dorsey described an "Osage Mourning-War Ceremony," in which ritualistic and symbolic features were especially prominent. The paper appears in the present number of this journal. In discussion, Dr Boas pointed out that ritual is especially characteristic of primitive man, giving expression to his most permanent activities; the rituals of different tribes are remarkably similar, yet the explanations given by the tribesmen often differ fundamentally — indeed, it would seem clear that, at least among primitive folk, actions are more permanent than thoughts. In an early stage of research the explanations of rituals are sought to elucidate problems of ritualistic development; but in a later stage the rituals themselves serve to elucidate the psychic development expressed in these explanations. Dr Fewkes followed, pointing out the way in which ritualistic development illustrates the growth of primitive faiths; for while belief is the initiative force lying be-

hind the ceremony, the ritual serves as an ever-active modifying force by which the belief is conditioned and shaped. He was much impressed with the importance of recording such ceremonies as that described by the author; they are fundamental facts which must be gathered promptly, else they will be forever lost; and once recorded they will assuredly find explanations as knowledge advances. In most cases, indeed, full explanations can not be derived from single ceremonies, nor even from all the ceremonies of a single tribe; in such cases the records will serve as a basis for comparative study. W J McGee added that peoples who participate in ceremonies can seldom explain them any more than a caged bird can tell why it beats its wings against the wires in vain efforts to migrate southward in the autumn. Ceremonies are at least partly instinctive, and it is largely through the heritage of experience and subconscious utilization of mnemonic order that the successive movements are guided. Thus the points of the compass are prominent in the rituals of all primitive peoples; and recognition of these is instinctive and undoubtedly inherited from even lower stages of development than those represented by Amerind tribes, and so persistent that even the enlightened Caucasian who seldom has occasion to remember the points of the compass usually carries them in his mind — indeed it may be said that the sense of orientation is our strongest instinct. Perhaps the closest analogy with the ritualistic movements of primitive folk may be found in the migratory routes of birds, which are sometimes so permanently fixed as to outlast great geographic changes. Dr Hough called attention to the community-sense expressed in primitive ceremonies; the primary thought may be that of a single man, yet all spontaneously mimic the action prompted by this thought, the older teaching the younger and the initiates guiding the uninitiated until all minds work in unison. Among the Hopi, ceremony takes the place of the school; it is the leading educational mechanism.

Dr Fewkes presented an illustrated paper entitled "A War

Festival of the Hopi Indians," in which he described one of the most significant ceremonies of that tribe. The paper is published in this number under the title "Minor Hopi Festivals."

W J McGee described the "Mortuary Ceremonies of the Cocopa Indians," who occupy the lower part of the valley of Colorado river. Their territory extends from the international boundary to the head of tides and salt water entering from the Gulf of California. Although they subsist in part by fishing and the chase, they are essentially agricultural. By reason of the floods of the Colorado they are driven annually from the bottom lands of the river to the higher grounds, just as were the ancient Egyptians occupying the valley of the Nile. The annual migrations are of great regularity, and have affected the habits of the tribe in various ways. One consequence of the enforced abandonment of homes during each summer is an enfeebled home sense; and this is connected with mortuary customs, both directly and through an obscure mythology. On the death of an adult his small properties are collected for distribution among non-relatives, while the body is placed on a rude bier and fuel is gathered for cremating it. Especially if the decedent is a householder, intelligence of his death spreads rapidly, and fellow tribesmen of other clans, as well as Indians of other tribes and even Mexicans and Americans, gather and help themselves to such property as weapons, fishing tackle, stored grain and other food supplies, fowls, horses, saddles and bridles, and other chattels. Meantime the pyre is being arranged alongside the house, and any remnants of the chattels (or all, in case claimants have not appeared) are placed on and around it; and about the end of the second day this is fired. The light-framed house soon catches from the pyre and is consumed with it, while any neighboring houses belonging to the family or clan also take fire, either naturally or by the help of the mourners, so that the entire homestead is destroyed. The surviving members of the family abandon the site forever; and it is shunned for years by other families of the

tribe. The communication was discussed by George A. Dorsey, Walter Hough, and J. D. McGuire.

By reason of absence of the authors, a few papers were presented by title only: among these were "The Possible Origin of the Folklore about Various Animals," by H. A. Surface; "The Australian Native," by J. A. Fowler; and "Uses of Archeological Museums in Education in the Public Schools," by Lee H. Smith.

A chronologic record of the sessions and papers of the Section, prepared by Secretary Smith, was printed in *Science*, vol. XVI, August 8, 1902.

Am. ANTH. N. S., 4-37.

MINOR HOPI FESTIVALS

BY J. WALTER FEWKES

THE WAR FESTIVAL AT WALPI

INTRODUCTION

The Hopi Indians, as their name indicates, are preëminently people of peace, who from necessity have often been obliged, in their past, to defend themselves from warlike intruders on their farms or from hostile attacks on their pueblos. For many years, unaided, they waged an almost constant warfare with the predatory Utes, Apaches, and Navahos, who devastated their farms and approached even to the foothills of the mesas on which their villages stand. During the seventeenth, eighteenth, and the first half of the nineteenth centuries these hostilities were almost continuous. Several of the older men¹ still show scars on their bodies, the results of wounds received in these affrays.

Evidences of these former fights are not drawn from tradition alone, for a willing listener may still hear them from the lips of participants. The cliffs themselves bear mute testimony of the warfare with which the Hopi defended their mesa homes. The Indians still point out to the sojourner climbing the trail a long score of marks cut in the rock, denoting the number of the dead who fell in one of these fights in which no man now

¹ The observations here recorded were made while the author was connected with the Bureau of American Ethnology, and are published by permission.

² Hani, Governor of Walpi, once showed the author wounds on his hand and body received in one of the last of the raids. He said that when he was a boy he went with a party consisting of his uncle Macali, Tavupa, Lemoya, Weeki, Tabaco, Totci, and himself, to what is now Cotton's store to trade. They were attacked by Navahos while asleep, and the first four were killed but the others escaped to Walpi. Tabaco died later, but Totci was still living at Zuni in 1900.

living participated. On the edge of the rocky buttress overhanging the trail to the East Mesa as one enters Hano, there can still be seen the grooves in the rock along which the ancient warriors shot their arrows or threw their spears at the enemy below them. In a cleft in the same mesa the old men point out a place¹ where the scalps of their enemies were once buried, and possibly there are other "scalp houses" at the other mesas. There are many other evidences that might be presented in support of traditions that the Hopi engaged their foes at the very entrances to their villages. Numerous as are the sources from which we might draw material shedding light on old Hopi-war customs, now rapidly vanishing, none is more significant than ceremonial survivals or the persistence of war customs in their present ritual, which, so far as the author knows, have never been described. One of these is an annual festival which will at least be highly modified and probably will disappear in the immediate future. Connected with this festival there are certain secret rites performed before idols of the War-gods and that of their "mother," or "grand-mother," the Spider-woman. The author has been informed that this or a like festival is celebrated annually at the three Middle Mesa pueblos, but he would judge from the statements of Dr Dorsey and Rev. H. R. Voth, who have recently carefully described² two of the Oraibi festivals, that a War-dance has not lately been performed in that pueblo. There is no War festival at Sichumovi, and the exercises at Hano consist of secret rites about the altars herein described.

One of the prominent societies in the social organization of the true Hopi pueblos is a fraternity of warriors called the *Kalehtaka*. This fraternity corresponds in a general way to the

¹ Called *Yowwotia*. The scalps attached to a stick were smoked over a fire kindled in the plaza of Walpi. A "medicine" was afterward made from them and portions of the entrails. Two Navahos killed north of East Mesa had their hearts cut out and buried.

² *The Oraibi Social Ceremony*, Field Columbian Museum, Anthropological Series, vol. III, No. 1.

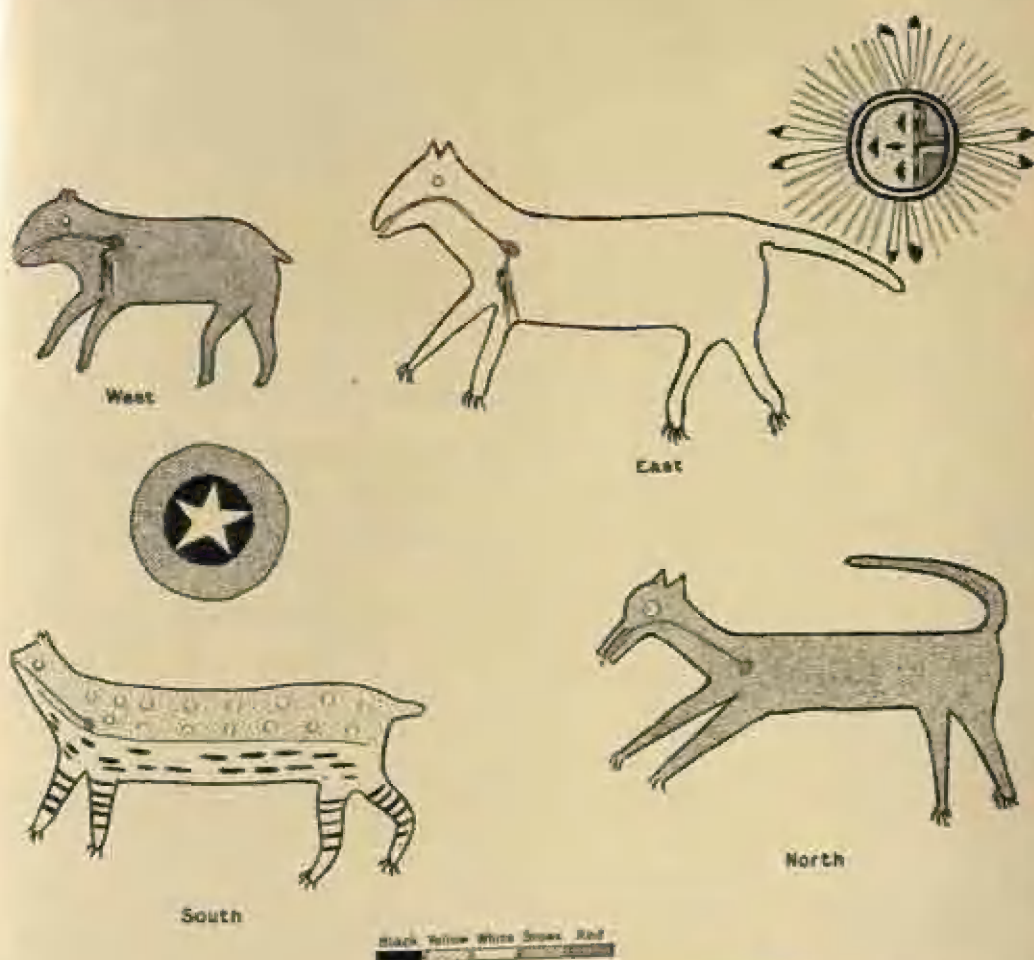
Priesthood of the Bow at Zuni, but in the Hopi pueblos this society has less power than the Zuni priesthood. Its annual festival is called *Monteita*, the prominent idols¹ being the Spider-woman and her twin offspring, the Little War-gods.

Pautiwa, the chief of the War society, is also chief of the Eagle clan of the *Pakab* phratry; he has charge of the above-mentioned idols, claiming to have inherited them from his predecessor, an ancestral chief of his clan. The present membership of the War society numbers about sixty. While the majority belong to the same clan as their chief, forming the nucleus of the society, there are others who belong to several unrelated clans. Since the festival is so closely connected with one group of clans, a brief reference to the traditional history of the group may be instructive.

Tradition ascribes the early homes of the Eagle clan to pueblos, now in ruins, situated to the east of the present Hopi country, and resemblances in the ceremonies and the ceremonial paraphernalia of the *Kalektaka* to those of the warriors at Zuni support these traditions. It is said that this clan once lived at Awatobi, and that after the destruction of this village by the other Hopi the survivors of the clan built a new pueblo in the foothills east of the present settlements of the Middle Mesa. This village was later abandoned, a portion of the inhabitants going to Walpi, carrying with them the idol of their War-god and other characteristic objects now displayed in the War festival, as will later be described.

In general the plan of the War festival of the Hopi resembles that of their other ceremonies in that it consists of three parts, occurring on three different days, as follows: 1, A preliminary informal gathering of the chiefs who engage in a ceremonial smoke and make certain prayer-objects. 2, A formal meeting of all the members of the fraternity for the purpose of manufacturing more

¹ Several Walpi clans have stone images of the God of War which are set up in their respective kivas in the *Soyuluña* ceremony at that pueblo.



FIGURES ON THE FOUR WALLS OF THE WARRIORS' ROOM

North wall, Mountain-lion (*Tidko*); West wall, Bear (*Hosaa*); South wall, Wildcat (*Tidndee*); East wall, Wolf (*Kumood*).

elaborate prayer symbols, at which idols and sacred objects owned by the society are arranged in a prescribed manner on the floor of a room set apart for this purpose; prayers and rites before them make up the secret rites of the festival. 3. A public dance of the warriors in the streets and the plaza of Walpi, when the participants, bearing the weapons of war and characteristically painted, perform in the presence of spectators.

ROOM OF THE WAR-GOD

The room at Walpi (plate XXIII, B) in which the secret rites of the warriors occur is one of the least known to visitors. Its ceiling is low; it is entered by a ladder (*e*), from the roof as in a kiva, but it bears no other resemblance to one of these ceremonial chambers. It is situated in the second tier of rooms, just under the old house of the clan above mentioned, and contains the warrior fetishes and paraphernalia.

The war chamber is twice as long as wide; it is rectangular, is without windows, and has a small fireplace (*f*) in one corner. Ordinarily this room is closed, as it is used only for the annual celebration of the society. In the north wall, diagonally opposite the fireplace, there is a small niche (*c*) closed by a slab of stone (*p*) ordinarily sealed in place with clay. This niche contains the idols of the God of War and other fetishes hereafter described.

Each of the four walls is decorated with a painting of an animal, and as this warrior room is oriented to the Hopi cardinal points, the animals depicted on the walls are those associated by warriors with these world-quarters (plate XXII). On the north wall there is a brown painting of a mountain-lion (*toho*), three feet long, with legs extended and facing west. Its eye is a fragment of Hallotis shell, and a red line continued to the mouth represents the breath-line which terminates in the heart. The outline of the figure is black, and its claws, which are the same color, are curved. The drawing on the east wall represents a

wolf (*kweuá*), about three feet in its entire length and painted white, the color symbolic of the east. Just behind it is drawn a disk symbolic of the sun with four pairs of radiating marks, or feathers, and red lines representing sunbeams. The figure on the south wall represents a wild-cat (*tokotci*); it has a white belly and legs margined in black, while its back is yellow and dotted. Above it is a circle enclosing a five-pointed star. The fourth mural painting, that on the west wall, represents a bear (*honau*) which is colored brown. This is the only room in Walpi which has these symbolic animals represented on its walls.

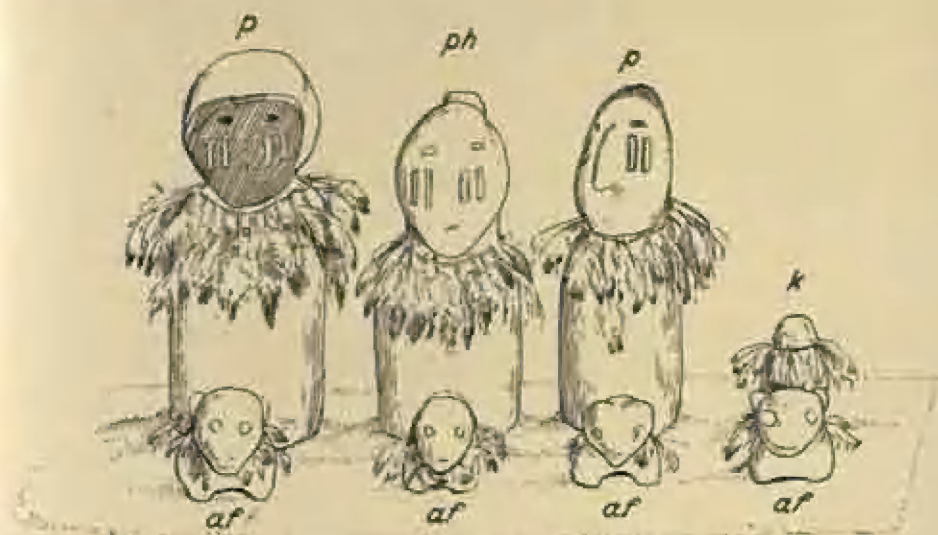
PRELIMINARY ASSEMBLY

The preliminary assembly of the priests took place at Walpi in the house of the oldest woman of the *Pakab* clan, on December 23, 1900, at about 6 o'clock P.M. The gathering consisted of two chiefs, Pautiwa and Maho, also Piba, Kannü, and one or two other men who sat about the corner fireplace. All smoked "for rain," terms of relationship being exchanged as the pipe was passed from one priest to another. After all had smoked for some time, Pautiwa prayed, and was followed in turn by Maho, Piba, Kannü, and the others. As each prayed the others responded "*Anchai!*" After additional smoking and praying the chief prepared stringed feathers, or prayers symbolized by objects, for future use.

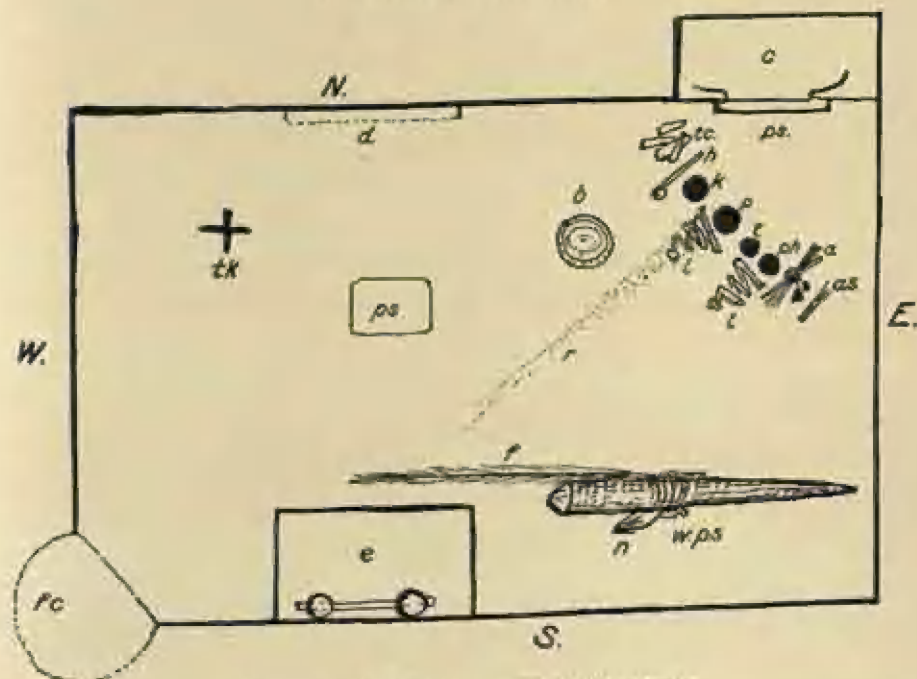
Ordinarily a preliminary assembly of this kind is followed, on the next morning, by a public announcement from a housetop by the Speaker-chief. This, however, did not take place in the War festival, but word of its coming was quietly circulated among the warriors.

MEETING OF THE WARRIORS

A meeting of all the warriors occurred in the room of the War-god five days after the preliminary assembly, at which time the War-god idols were taken out of the niche in which they are



A. IDOLS OF THE HANO WAR ALTAR



B. ENGRAVING OF HANO AND OF THE WALE WAR ALTAR

a, Bundle of arrows; af, Animal pens of War-god; az, Aspergill; x, Tray of sacred meal; c, Crypt in which idols are kept; d, Doorway to back room; e, Entrance to war room, showing ladder; f, Eagle feather; l, Ancient war-club with attached stone; l, Idol of Spidan-woman; l, Lightning framework; a, Package of sacred meal; p, Idol of Paluuhaya; ps, Pain-stone; r, Line of meal on the floor; t, Tiponi; N, Stone implements; tk, Wooden cross (*tokpela*); wps, Warrior prayer-stick.

kept and arranged on the floor, forming what may be called a War-altar.

THE WALPI WAR-ALTAR

When a priesthood in primitive society acts in concert for some mutual wish, the members rely for aid on the magic power of certain natural or artificial forms of objects belonging to the priesthood. These articles are installed in a prescribed manner and collectively form an altar.¹ As the desire of warriors is, naturally, success in war, this altar is supposed to have magic power to aid them in that direction.

One of the first events on the opening day of the War festival is the installation of this altar, which occurs in a room devoted to the War-god. This is the traditional home of the fetishes of warriors, and here, away from the eyes of the vulgar, they may be seen by all the initiated. It needs but a glance at these objects to discover what little they have in common with those which form the majority of the Hopi altars; they are not, as is generally the case, connected with rain-making and growth ceremonies, nor, as will later be seen, do the rites performed before them have these functions. They are connected with war, and the magic power they are supposed to possess is invoked for success in war, not in agricultural pursuits.

WAR-IDOLS AND OTHER OBJECTS

The most conspicuous of these objects is the idol of the War-god, *Puukoonkoya*, a black stone image about eighteen inches high, having a human form but with a nearly cylindrical body and spherical head, and with a conical cap. Its position (*p*) is indicated in plate XXIII, B. Rude indentations in the face mark eyes and mouth; the fingers are painted on the surface of the body, but neither legs nor arms are cut in relief. The most conspicuous marks on this image are pairs of short, parallel white bands on each cheek and breast and on the lower part of the

¹ In Hopi called *pölye*. The term "altar," which is the nearest English equivalent and has been adopted by later writers, is not a wholly satisfactory translation.

body. These markings are characteristic of the War-god or cultus hero of the warriors.¹

A second stone idol, of about the same size, stands by the side of the one described. The image, called *Paluñahoya* (*ph*), is brown, with a white face on which are depicted eyes and mouth. Its head has a conical appendage resembling a hood, and is but slightly differentiated from the body by a groove indicating the neck.

The third stone image (*k*) is brown or black, of almost spherical shape, and has no resemblance to a human form. It is placed to the right of the War-god idol, and is known as Spider-woman. Between the two images last mentioned is a cylindrical object (*f*), called a *tiponi*, wrapped with white cotton string, its diameter diminishing slightly from base to apex. Numerous long feathers project from its apex, and a "necklace" of many small sea-shells is tied about its upper part. From the base of the *tiponi* there was drawn across the floor a line of meal, on which lay a string with an attached feather, representing a symbolic trail or pathway along which magic influences are supposed to pass. This object is the badge of the Warrior-chief.

There are numerous other objects on the floor near the idol, one of the most characteristic of which is a framework (*l*) composed of slats of wood with the ends tied together in such a manner that it can be extended or shortened; in the former case it has a zigzag form suggesting a shaft of lightning and giving the implement the name of "lightning framework." In public exercises a personator of the War-god commonly carries one of these objects which he extends and retracts by alternately separating the slats and drawing them together.²

At the left of the image of *Paluñahoya* there is a bundle of

¹ Certain species of hawk have two parallel rows of feathers on each side of the mouth which probably suggested the facial designs; the parallel marks on the body represent feathers, or rows of the same.

² For a figure of a personator of *Paluñahoya* with the lightning framework see *A Journal of American Ethnology and Archaeology*, vol. II.

arrows (*a*) tied by a string to which shells are attached; and to the right of the stone representing Spider-woman is a stick (*b*) with a stone tied in a bag at one end — a now obsolete implement of war. Near this ancient weapon there are several well-polished, light-brown stones (*c*) resembling the so-called *icamahias* which are arranged about the sand-picture of the Antelope altar in the Walpi Snake-dance. To these stones (which also are an ancient form of weapon) are tied strings with attached feathers.

From the rafters above the row of objects on the floor forming the altar there hangs, horizontally, a rod to which are attached three vertical, semicircular hoops covered with raw cotton, symbolizing rain-clouds; and a number of strings of equal length are suspended from the rod, representing falling rain. A wooden cross (*tk*), called *tekpela*, also hangs from the roof.

An examination of the objects described reveals the absence of many of the symbols which characterize most Hopi altars. Thus, symbols of falling rain and of corn are subordinate or wanting, but are replaced by implements of war; the Goddess of Growth is represented by the Spider-woman, grandmother of the twin War-gods.

This is not the proper place to discuss ideas of magical powers which primitive man ascribes to natural objects, idols, or symbols; but a belief in the mysterious powers, as well as in the correlative thought that by certain acts these powers can be made to aid mankind, is universal. Among many qualities which impart magic power to objects may be mentioned their form, age, and association with events or other mysterious influences. The objects themselves may be animate or inanimate, generally the latter, and they appear in primitive religion in such forms as totems, charms, mascots, and the like. Every priest's power of magic is augmented to the extent in which he can control the magic power of these objects or force them to aid him. The idols and old war implements are supposed to have certain magic power and are brought together as symbols of that power.

After assembling in the pueblo on the fifth day, each warrior made a prayer-stick (*wps*) with a single shaft, about the length of his index finger, pointed at both ends and with an eagle-feather (*f*) and a packet of meal (*n*) tied midway of its length, so that, in all, fifty-nine of these objects were made. When all had finished making them, the chief swept the floor and placed in the middle of the room the flat stone which is used to close the niche in which the war images are tightly sealed when not in ceremonial use. Upon this stone he poured a little "medicine" from the bowl, to which he added saliva, and ground in the mixture some soft iron oxide which formed a red pigment called *cata*. While Pautiwa, their chief, was thus occupied, the warriors smoked; and when he had finished, all prayed in sequence, after which everyone approached the stone slab (*ps*) on which the paint was ground, and, holding his prayer-stick in his left hand, painted it with the fingers of the right, at the same time singing a low, melodious War-song. The painting finished, the participants sprinkled a little glistening micaceous hematite over the shafts of their prayer-sticks and placed them in a basket before the idol of the War-god.

The chief next made four prayer-sticks with double shafts, only two of which had facets on one of the component parts, but all were painted green and had feathers, herbs, and packets of corn tied to them. He likewise made a feathered string for the god *Masauá*, and offerings for other supernatural beings. At the close of the dance the warrior prayer-sticks were deposited in various nooks or shrines, in the rafters of the old houses, and elsewhere.

On the night following the making of the warrior prayer-sticks, ceremonies were held in the room of the War-god. These exercises began shortly after midnight, and it was stated that a personation of *Masauá* appeared at that time, but the author was unable to witness them on account of other observations in adjacent kivas.

THE WAR-DANCE

The public War-dance occurred at sunrise on the following morning. Each participant carried a gun or other weapon which, in the progress of the dance, he fired into the air. The dance, which was accompanied by a drum, was a spirited one.

There are resemblances between this War festival at Walpi and that at Zuñi; and there exists a close similarity between the *Kalektaka* society of the Hopi and the Priesthood of the Bow of the latter tribe. The author has seen at Zuñi warrior prayer-sticks closely resembling those of the *Kalektaka* described above and practically identical with those from Rio Grande pueblos.

The traditions of this War fraternity and those of the clan from which it was derived point to a former closer contact with the Zuñi, thus indicating a source from which the Hopi War celebration possibly originated. Regarding the ancient homes of the *Pakab* clan, we know enough to justify the supposition that it was not far from a ruin, called Kintiel by the Navaho, twenty-five miles north of Navaho station on the Santa Fé Pacific railroad. It is well-nigh proven that this clan lived at Awatobi two centuries ago, but which of the numerous ruins east of the Hopi pueblos were inhabited by *Pakab* clans, future research must decide. After the destruction of Awatobi, its survivors were carried to the foothills of the Middle Mesa, where they built a town which was later abandoned. From this pueblo the ancestors of the existing *Pakab* men and women at Walpi went to the East Mesa. In the light of this tradition the War-dance of Walpi may be regarded as a survival of an old Awatobi festival, which in turn was related to the ceremonies of the Priesthood of the Bow at Zuñi.

THE WAR FESTIVAL AT HANO

As shown in the preceding pages, the War festival at Walpi is quite distinct from that of the Winter Solstice ceremony, the War-altar being placed and the accompanying secret rites being

performed in a special room used for that purpose only, while the Walpi Winter Solstice altars are erected in kivas. At the neighboring pueblo of Hano the conditions are somewhat different, for at that village the War-rites form a part of the Solstice festival, and the War-altars (of which there is one in each of the two kivas) are placed in the same room as those used in the festival of the Winter Solstice. These Hano altars may be distinguished by the names of the rooms in which they are placed, i. e., the *Tewa-kiva* War-altar and the *Kisombi-kiva* War-altar. In both of these, as in that at Walpi, the War-god images occupy prominent positions. The former consist of eight stone figurines arranged in two parallel rows, those in one row representing gods of human form, those in the other gods of animal form. The idols in one row are called *Pūūkōñhoya* (*p*, *p*), *Paluñahoya* (*ph*), and *Kokyañ-wūqti* (*k*): each object (*af*) in the second row is called a "pet" of the being before whose image it stands. All these idols occupy a rectangular field made of prayer-meal, from which a line of the same material is drawn to the base of the ladder by which one enters the room.

The War-idols of the *Kisombi-kiva* resemble those of the *Tewa-kiva* and bear like names; they are placed on the raised floor of the kiva, the Winter Solstice altar being in the same relative ceremonial region. Of these four idols the central and largest represents *Pūūkōñhoya*, in front of which is the stone of the Spider-woman (*Kokyañ-wūqti*), and at the left is the idol of *Paluñahoya*. A bare, bird-shaped stone, which stands near the last-mentioned, is called *Wikozro*,¹ an equivalent of a Bird-god or a Sky-god in Walpi mythology. These idols also stand on a rectangular field of meal strewn on the northeastern portion of the floor, and from it a line of meal is drawn to the base of the ladder.

A comparative study of the Hano War-idols reveals a likeness

¹ Evidently, judging from a remark by one of the old men, this is a Sky-god personation with bird symbolism.

in shape and in name between them and the images-used in certain Rio Grande pueblos. This should be expected when it is considered that Hano is a Tanoan pueblo. These likenesses favor the belief that the form of the war cult which they illustrate was derived from New Mexico.

The author witnessed no public war exhibition or dance of the Hano warriors, but it can hardly be doubted that in former times such occurred, and it may still be resurrected from time to time at the present day.¹

Before passing to the consideration of other festivals having no relation to the one described, we may record an incident illustrating war customs which occurred at Oraibi in the spring of 1891, when a squad of six soldiers and two civilians went to Oraibi to arrest certain Indians. The natives manifested hostility, and gathered on the housetops to offer resistance. On account of their attitude and the insignificance of the military force, it was wisely decided by the officer in command to withdraw, but the soldiers returned a few weeks later with several troops of cavalry and some mountain howitzers.

At this time the author was living at the East Mesa, and learned from Polaka, a Hano Indian who accompanied the party, of certain Oraibi personators who appeared on this occasion. The Indians, it seems, dressed three of their number to represent the three War-gods,—*Masauú*, *Kokyan-wúgti*, and *Puúkoñhoya*. The first two, arrayed in prescribed costumes, appeared in the plaza, and one of them, by means of an aspergill, threw "charm" liquid on the soldiers. The last mentioned, or the

¹ While, as a rule, ceremony is less mutable than mythology, and far more conservative than explanation of rites, both ritual and mythology slowly change with advancement in culture. A prominent element in the mutation of ceremony is syncope—the dropping of rites at one stage of progress being deemed essential. The Hopi ferial calendar is full of these modifications, which often change the whole aspect of the ritual. This is apparent when we compare the same festival in different Hopi pueblos where slight initial changes have grown into radical differences. It is also seen when we compare the present festivals with those of the same pueblo in the past.

Little War-god, did not appear in public, and the author was informed that his arrival on the scene would have been a signal for the beginning of hostilities, which were happily averted.

That part of this episode which is especially instructive to the ethnologist is the personation of the War-gods (two of which are symbolized by graven images on the War-altars above described) by men in carrying out the war customs which survived such a short time ago in the isolated pueblo of Oraibi.

THE LESSER MAMZRAUTI

INTRODUCTION

From the War festival and its altars we turn to consider a subject of very different character and meaning—a festival called the *Lesser Mamzrauti*, which has been added to the Hopi ceremonial calendar from the ill-fated pueblo of Awatobi, and which has never been described.¹ The great Hopi festivals, as a rule, are complemented by lesser ceremonies, so that the same society of priests usually has two annual presentations of its rites—one elaborated, the other abbreviated—about six months apart. The smaller festivals sometimes occur twice a year, also indicating the division of the calendar into two parts.² The lesser mysteries of the Snake and Flute priests have already been described by the author, who has witnessed also those of the *Lalakoñti* and *Mamzrauti*. The former is simply a meeting of chiefs, the latter has an altar and a public dance differing somewhat from the greater ceremony.

The lesser *Mamzrauti* witnessed in 1900 lasted five days, beginning with the assembly on March 11th and closing on March

¹ Probably there is a *Mamzrauti* at each of the Middle Mesa pueblos; and while we have no description of the Oraibi variant, the author has a photograph of the public dance at that pueblo made over ten years ago. The Oraibi *Marau* altar forms one of the groups of lay figures in the Field Columbian Museum, Chicago, made under the direction of Rev. H. R. Voth.

² Payne (*History of America*, vol. II) has shown a similar division in the Aztec festival calendar.



THE PALAHIKO-MANA DANCE

15th. The two important aspects of the festival here considered are the altar and the public dance, the latter called *Palahiktikibi* on account of the appearance of certain personages called *Palahik-tiyo* and *Palahiko-mana* — cultus hero and heroine of the society. The altar is a part of the main altar erected at the greater *Mamrauti* in October; the public dance has simply the cultus heroes, which are inconspicuous in the autumnal festival. The greater part of the assembly day was occupied by the installation of the altar objects (*wimi*)¹ in the *Nacab-kiva* by Saha and Saliko, the two chieftainesses. Nothing of great importance took place on the following three days, but the chiefs remained in the kiva, and at intervals members of the society came to sing, smoke, and recite prayers. Each evening there were chorus songs which lasted far into the night, and earlier or later all the women tied stringed feathers to the altar objects.

THE LESSER MAMZRAUTI ALTAR

The altar of the lesser *Mamrauti* (plate xxv) is practically that portion of the greater altar of the society arranged in October on the floor before the reredos. A centrally placed object, called "mother," consists of a wooden stick, the end of which is cut in the form of a disk to represent the head, the eyes and mouth being indicated by painted dots. The main portion of this stick is somewhat smaller in diameter than the head, and about it winds a screw-like elevation which has given the name "twister" to the fetish.²

On each side of the "mother," or "twister," is a flat stick, also ferruled, called the "father," while two additional wooden slats, bearing symbols of rain-clouds, stand one at the side of each "father"; and on one side of each of these are two zigzag

¹ This term corresponds to "*grenda*," or that phase of magic power so well defined by Hewitt, but, unlike it, is used both objectively and subjectively.

² In medicinal practices this twister is used to cure face or bodily muscular contortions. Like so many other altar objects, it was formerly made of stone; one of these was found by Mr T. V. Keam at Awatobi.

sticks representing lightning. Black rods varying in length, called "children," form the ends of this row of objects, but at the extreme right there is a flattened stick used as a standard and placed at the kiva hatchway during the day. The prayer-sticks are sometimes put in the ridge of sand before the symbols of children.¹

The two conical objects forming part of the altar paraphernalia are called *tiponis*, and belong to the two chief priestesses, Saliko and Saha. There are likewise two bundles of black sticks decorated with many feathers, resembling Roman fasces.² Other objects on the floor are a rattle consisting of a curved stick to the end of which are attached conus shells, two feathered implements used in sprinkling the altar, two bone whistles, a tray of sacred meal, and a stick with a bunch of hawk-feathers tied at one end.

PUBLIC DANCE OF THE LESSER MAMZRAUTI

The public dance began at sunrise and was continued at intervals throughout the day, closing with a feast. The female actors, called *Palahiko-manas*,³ in the first performance of the day were personated by the two chieftainesses, followed at intervals (which were occupied in dressing) by other members of the society. In the late afternoon performances, during which most of the author's notes were made, four girls, accompanied by a man personating *Palahik-tiye*, appeared. The dancers were accompanied by a chorus, one of whom beat a drum. (See plate XXIV.)

¹ There is no record as in the October *Marau* altar at Walpi. In this respect the lesser altar at Walpi resembles the model of the Oraibi *Marau* altar assembled by Mr Voth in the Field Columbian Museum; in other details the two differ widely. The Middle Mesa *Marau* altars have not been described.

² These bundles in some other ceremonies are said to represent the Spider-woman, or Earth-goddess; more accurately speaking, the bundle contains the symbolic fetiches of this personage, the sticks being offerings tied about them.

³ As has elsewhere been shown, the same personation in different pueblos, or even in the same dance, has different names. *Palahiko-mana* is often called *Calahiko-mana*. *Tewéwé-hachina*, the child-bearer at Walpi, is called *Ho-hachina* at Oraibi, judging from Mr Voth's recent article on the *Powamu* of that pueblo.



THE LESSER MAMZRAUTI ALTAR

MARAU-MANA OR PALAHIKO-MANA

The most striking object in the apparel of *Palahiko-mana* is a wooden head-dress of horseshoe shape, with radiating appendages also of wood, fitting over the crown of the head where it rests on an annulet made of corn-husks. Its interior and posterior surfaces are flat and painted with concentric bands of different colors, yellow, red, and green predominating. A symbolic ear of corn, made of wood, to each end of which is attached a fragment of sheepskin with the wool died red, hangs over the forehead.

The radiating slats which arise from the horseshoe body of the head-dress vary somewhat in size, consisting of a medial (the largest of all) and seven lateral on each side. All of these have terraced tips, decorated with feathers; one of the tips on each side has curved, anchor-like appendages representing the coiffure peculiar to Hopi maidens and symbolizing squash-blossoms or the fructifying power of nature. The markings on the radiating slats are practically the same on both sides. Perhaps the most problematical objects worn by these girls are small pedunculated wooden cups, of various colors, placed in the corn-husk annulet which supports the horseshoe head-dress. Practically the same objects are found in the Flute-altars of several Hopi pueblos. From a bunch of feathers attached to the back of the head there projects, higher than the rest, one or more eagle tail-feathers.

The face, arms, hands, legs, and feet of the *Palahiko-manas* are colored yellow, and there are red triangular markings on the cheeks. Their long hair hangs loosely down their backs.

For garments the girls wear ceremonial kilts, white embroidered blankets, anklets, a great profusion of silver and shell necklaces, square mosaic ear-pendants, and a great white cotton girdle. They carry two feathers in each hand.

The identity of *Palahiko-mana* and *Calako-mana*, is so close that the author is led to regard them as practically the same

personage¹; and the ears of corn over their foreheads betray their identity also with the Corn-maid who reappears elsewhere in the Hopi ritual under other names. Thus a comparison with the cultus heroine called the Flute-maid shows the same facial markings and similarities in other symbols, which tend to support the hypothesis, elsewhere expressed, that these cultus heroines of two different clans are identical and must have been brought by related clans to the Hopi from the same part of Arizona. The traditions tell us that *Caliko-mana* was introduced by a clan which once lived on Little Colorado river, south of Tusayan; the logical conclusion, therefore, is that her equivalent, the Flute-maid, had the same origin, and that the Hopi Flute clans came from the same region.²

The tradition of the Mamzrauti preserved by the chief, Salako, declares that their idols (among which is the statuette of *Marau-mana*, practically representing the same being which the *Palahiko-mana* personates) were obtained from Awatobi, having been brought to Walpi by a woman whose life was spared at the time of the massacre. It was not discovered by the author to which clan this woman belonged, nor whether her ancestors lived in the pueblos on the Little Colorado, but the probabilities, drawn from the similarities between the *Calako-mana* and *Palahiko-mana*, indicate that her ancestors lived in that region, and these support other evidences that some of the Awatobi people came from the same locality. There is another important fact which supports the conclusion, derived from a study of *Calako-mana*, or her equivalent, *Palahiko-mana*, and the Flute-maid, that the Flute clans, of which the latter person is the cultus heroine, came from

¹ The lesser *Mamzrauti* or *Palahikiti* may, from this resemblance, be called the Hopi *Calako*, but it has no resemblance, save in name, to the Zuni *Shalako*, also sometimes performed at Sichumovi.

² The *Lahoni-mana*, cultus heroine worshiped in the festival called *Lalahoni*, is also the same maid with another name. Tradition declares that her cult was brought to the Hopi by the Rain-cloud clans which once lived in southern Arizona, or the same section whence came *Calako-mana*.

the same section as the clans which brought the former; in other words, that the Flute clans came to the Hopi country from the same region of Arizona as the Rain-cloud clans which brought the *Palahiko-mana* cult.

The distinctive fraternity of the Rain-cloud clans now existing in Walpi is called *Kwakwantá*. The members of this society wear head-dresses with single horns called *cotokinuñwá*, and carry in their hands wooden imitations of the Plumed Serpent. In a way we may say that they personate ancestors with symbolic likenesses to a Sky-god as a Great Serpent. In other words, the Serpent-Sky-god is the cultus hero of the *Kwakwantá*.

Turning now to the cult of the Flute clans, we find the same Serpent-Sky-god, with some variation, a prominent feature in their worship¹ as shown in the name and the symbolism of the main idol of the Oraibi Flute altar. Dissecting the symbolism of this idol, it is found that it has a single horn on the head, which may be homologous with the horn of *Palulikoñ*, the Plumed Serpent. Like all Sky-gods it has bird affinities, indicated by the wings, while the zigzag lines on the legs represent lightning, which is also a Great Serpent symbol. Combining these objective features we find that the idol of the Oraibi Flute altar represents a Bird-Snake-god, and etymology teaches that its name indicates a Sky-god.²

MARAU-TIYO OR PALAHIK-TIYO

The male personator who accompanies the female has his body painted with bright pigments and wears a ceremonial kilt, a great embroidered sash, and a cotton girdle. The symbol which more than all else determines his identity is a painted cloth or

¹ The idol is called *Cotokinuñwá*, the Plumed Serpent; it is symbolized by zigzag markings on the legs.

² Some of the Hopi say that *Cotokinuñwá* is their equivalent of the God of the white man. A supernatural being with the same objective symbolism reappears again and again in Mexican and Central American mythologies, where it is sometimes called "Creator."

buckskin stretched over a wooden framework and worn on the back. This object, which the author has elsewhere called a "moisture tablet," may be a Sun or a Sky-god symbol, and is worn by the *Kwakwantá*, a priesthood in the New-fire festival, and by one of the Flute priests in their dance. The evidence afforded by the legends that *Marau-tiyo*, the Flute-youth, and the *Kwakwantá* lived in the same locality before going to Walpi, is therefore augmented.

The author is not aware that the Zúñi have any personation comparable with *Palahiko-mana*, but certain traditions of both the Zúñi and the Hopi indicate the same or nearly the same place near St Johns, Arizona, as the home of the *Calako* cultus. This place the Hopi call Winima, and it is possible that it was formerly an inhabited pueblo from which some clans went to Zúñi and others to the Hopi country. Both have preserved the same name, *Calako*, or *Shalako*, in their respective modern homes, but the Zúñis have retained the festival in its more original form.¹ The Hopi *Calako-mana* is the best-preserved personage surviving in it.

WINTER SUN PRAYER-STICK MAKING

INTRODUCTION

One of the most venerated societies of priests in both Walpi and Hano is called the Sun priesthood, which has a summer and a winter meeting in both pueblos. The summer meeting has been elsewhere described. The author attended the winter meeting of the Walpi Sun-priests for the first time on December 17, 1899, and here records what then occurred in order to fill a few gaps in our knowledge of this ceremony.

The general character of the ceremony of the Sun-priests, its duration, and the place in which the celebrants assemble, are the same in both summer and winter observances; but in the summer

¹ The so-called Zúñi (Sio-) *Calako* is sometimes performed in Sichumovi, but it was introduced there directly from Zúñi in the last generation.

performance the offerings to the sun are deposited in a shrine called the "east sun-house," representing the summer solstice, while those of the winter ceremony are deposited in a shrine west of the pueblo, representing the "winter sun-house" or winter solstice. In both instances the offerings are practically identical in form and significance.

The participants were Kwatacwa (chief), Supela, Tcūbi, Anawita, Sakwistiwa, Tcasra, and Tcoshoniwū, all members of the *Patki* or Rain-cloud clan. This meeting occurred in the room near the *Moñ-kiva*, in the lowest story of the ancestral *Patki* building. This chamber, which is without windows and doors, being entered from the roof, is set apart for this meeting like the old *Pakab* house when the warriors gather for the *Momtēta*. In a way we may liken these rooms to kivas, but in their use as ceremonial chambers they probably antedated the latter. In early times, while secret rites were still limited to the clan, such rooms were amply sufficient for all purposes; but when the sacerdotal fraternity composed of many clans was formed, these clan kivas were not large enough to accommodate the members, consequently large rooms were constructed. These special rooms are the society kivas, which in Walpi and other Hopi pueblos are necessarily so placed and constructed as to be separated from the clan dwelling by reason of the size and composite nature of the societies which gather in them.

In most of the Arizona ruins thus far opened, no society kivas have yet been found, probably because clan kivas or rooms owned by different clans were ample for the clan festivals. In early times there were probably no society kivas, because no large priesthoods existed, and it was only after the pueblos became large and composite that these rooms were built. The Flute society, the Sun-priests, and the Warriors of Walpi still hold secret rites in what may be called clan kivas or clan rooms, while the ceremonies of the other societies are conducted in society kivas.

The secret rites of the Sun-priests last but a single day: they

consist mainly of the manufacture of prayer-bearers or prayer-sticks, of ceremonial smoking, songs, and verbal prayers. The following kinds of prayer-bearers were made: 1, Thirteen prayer sticks, called sun *pahos*; 2, One artificial eagle egg; 3, Two clay images of quadrupeds; 4, Two warrior prayer-sticks; 5, One prayer object in the form of an ear of corn. The manufacture of these objects occupies the whole morning, and when finished they are arranged in order in a basket-tray placed in a corner of the room, the pointed ends being toward its center. A few words regarding these prayer-offerings may be instructive.

The sun prayer-sticks, which are the most numerous, differ from each other in but one essential feature. All are double, or made of two sticks tied together; but while some of these have terminal facets cut on one or both, others are without them. Seven prayer-sticks have two facets with painted dots to represent eyes and mouth; six have a facet on one stick only, and one has no facet on either of the two sticks. The faceted wand on a double prayer-stick is ordinarily called the female, the non-faceted, the male. The bodies of the stick are painted green, the facet yellow, and the facial dots black. All are pointed at one end and are of the length of the middle finger.

The two shafts are bound together by a cotton string in which is inserted a corn-husk packet of meal; from this extends a string, to the end of which a feather is attached. The binding string also holds in place a turkey-feather and two herbs—appendages which are not characteristic of the sun *pahos*, but occur in several other kinds of prayer-emblems. Inserted between the cotton string and the shafts of the prayer-sticks is a small twig, crooked at one end, from which hangs a feather, while another string connects it with the shaft. This crook is peculiar to the prayer-stick of the Sun-priests and is believed by the author to be a diminutive representation of an implement akin to a throwing-stick,¹ the

¹ Cushing has pointed out the same likeness in his article on "The Arrow," *American Anthropologist*, vol. VIII, 1895, p. 307.

object of which is to increase the velocity of a shaft thrown into the air. Its prototype is repeatedly used in Hopi rites, and it occurs among Hopi ceremonial paraphernalia always apparently with the same or nearly the same meaning. One of the most instructive prayer objects made by the Sun-priests is oval in form, painted white, and with a string about its lesser circumference to which a feather is attached. This object represents an eagle's egg and is placed in a cairn, called the Eagle-shrine, as a prayer for the increase of eagles. There were also two rude clay imitations of quadrupeds—sheep or other animals. At the close of the rites they were placed in sheep corrals and elsewhere for the increase of the flocks.

The warrior prayer-stick is the same as that made in the War festivals, and is probably an offering to the War-gods to protect the farms.

An object representing an ear of corn well illustrates the Hopi mode of prayer by signatures. It is made of wood, elongated in form, with a corn-husk packet to which a feather is tied. One pole is marked with parallel lines, and the surface is divided into small, black, rectangular figures, each with a central dot, representing seeds. This object is a prayer symbol for corn.

SONGS AND PRAYERS

The songs that are sung and the prayers that are uttered over the objects are supposed to impart to them the magic power of the priests; for when a Hopi breathes on sacred meal and sprinkles his idols with it, or, for instance, throws it toward the sun, he expresses his wish and makes the meal a bearer of his magic power. The meal thus becomes a prayer-bearer, its efficacy being enhanced by objective symbols or signs; hence a packet of meal tied to an artificial ear of corn becomes more efficacious than meal alone.

The consecration of the prayer objects, by which is meant the imparting to them of the magic or wish of their maker, is

accomplished by songs, prayers, and ceremonial smoking, each mode of transfer being supposed to vivify the objective symbols and to endow them with the magic power of the priests.

From the flat basket containing the above prayer objects, placed on a pile of sand in a corner of the room, there is drawn across the floor to the ladder a trail of meal and corn-pollen. This line is a symbolic road along which the power of the prayer emblems is supposed to pass. Just in front of this basket, on the meal line, is placed the stone fetish of a frog, over which is stretched a cotton string with an attached feather. The frog is the only object, besides the prayer emblems, used by the Sun-priests,¹ and is highly revered by them as efficacious in bringing rain. After this simple arrangement of basket, symbolic trail, and frog fetish, the Sun-priests approach the simple altar and begin their ceremonial smoke, songs, and verbal prayers.

Smoking, singing, and praying impart to the prayer-bearers the will of the worshipers. In the first method the pipe was lighted by Teübi, the Pipe-chief, who passed it to Kwatcakwa, addressing him as his father and receiving in reply the corresponding term of relationship. The chief then puffed smoke on the objects and toward the four solstitial points.² The other men smoked in sequence from the same pipe, receiving it with an exchange of terms of relationship. These have been so often mentioned in the author's writings that they need not be repeated here.

Verbal prayers follow the smoke prayer. Each man, preceded by the chief, took a handful of meal, breathed his prayer on it, and sprinkled the prayer-objects in the basket-tray. Song prayers follow those verbally delivered; but the intent is the same, only the manner of directing the power being changed.

¹ Note the association of a frog fetish with Sun ceremonies.

² The smoke carries the prayer from the chief; it transfers the wish of the smoker to the object; moreover, it is a cloud and is symbolically efficacious in bringing that which clouds produce—rain.

After the songs, in reverse order, come verbal prayers and smoking, the rites closing by the chief passing from priest to priest and daubing the cheek of each with meal.

Directly following the event last mentioned occurs a purification rite which, in simple or elaborate form, takes place in most Hopi ceremonies. It is regarded by the priests as necessary to avert harm from the individual, but its meaning is possibly better expressed by regarding it as a protection from evil magic. The object used in this rite is ashes, the product of fire, the power of which is always regarded as potent and mysterious. Supela passes to each person a handful of ashes, and then, standing in the middle of the room, sprinkles a little of the same substance along the mid-rib of a feather. Each priest holds a pinch of ashes in his closed hand as Supela sings a low song and beats time with the feather to which he imparts a quivering movement. He then walks around the room, drawing the feather across the feet of one priest after another, who in turn makes passes over his head in a horizontal circuit and throws the pinch of ashes toward the hatchway. Supela again passes around the room, touching with the feather the knees, loins, chest, and head of each priest, who in turn makes circular passes over his head with his left hand, and throws a pinch of ashes toward the entrance to the room. Supela takes new pinches of ashes for each circuit, and the ashes each priest has after the final circuit is thrown toward the hatchway. Immediately after this purification rite, wives and sisters of the assembled priests appear at the entrance to the room and pass food to those below. Each woman brings with the food a handful of prayer-meal, which is given to Supela, who sprinkles it on the prayer-emblems. A feast closes the celebration, as is universally the case in Hopi festivals.

The simple ceremony herein described is repeated twice annually, once near the summer and again at the winter solstice. It is an instructive example of sun worship, and as such there are one or two related facts which may be emphasized. All the Sun-

priests are members of a group of clans which in ancient times lived in a land called Palatkwabi. The route of migration of these clans is so well known that there is no doubt of their southern affiliation, and it may justly be concluded that the cultus here described came from a southern country.

The introduction of the fetish of a frog is significant, and is the only instance known to the author in which an image of this creature is used at Walpi, although pictures of the frog are constantly found on altars and ceremonial paraphernalia. It is regarded by the author as the symbol of the Sky-god or of the Rain-god, so that we may interpret it as connected with sun worship, so far as that which it symbolized is concerned.

This seems an appropriate place to refer to the frog images made of shells encrusted with turquoise, a few specimens of which have been found in ruins of the Southwest.¹ Although these mosaics may have been worn on the breast in ceremonial personations, it is hardly probable that they were put to purely secular uses, and they therefore may have been used by the ancient people of Arizona in somewhat the same way as the frog idol above described.

THE BUFFALO-DANCE (MUCAIASTI)

INTRODUCTION

There is no evidence known to the author that the bison, or American buffalo, ranged in historic times as far west as the arid region of Arizona in which the Hopi pueblos are now situated, but there is abundant proof that the ancestors of some of these Indians knew this ruminant, and obtained its hide in trade for the manufacture of various articles of apparel or ceremony. It would appear improbable that a people with such a limited personal knowledge of the animal as the Hopi must have had, could have developed a bison cult; but the fact that the Hopi are

¹One of these, from Chaves Pass, is figured by the author in the *Smithsonian Report* for 1897.



Henry Wright. Gifted by the artist.

THE BUFFALO DANCE

a composite people, partly consisting of descendants of those who once lived near where these animals were hunted, gives more probability to the existence of such a cult among them.

The clans of Tiwa, Tano, and Tewa extraction which joined the Hopi at the close of the seventeenth and in the beginning of the eighteenth century, no doubt had a form of the buffalo cult which had been practised in their New Mexican settlements. The valley of the Pecos, within the memory of many living Pueblo Indians, contained herds of buffalo, and men of these three pueblo groups are known to have hunted the animal in that region. The Buffalo-dance, no doubt, had a prominent place in their ceremonials and was carried with them when they moved westward to the Hopi country. This explains the fact that we still find a survival of this dance at Hano, the Tewa pueblo on the East Mesa.

It was the good fortune of the author to witness the Buffalo-dance at Walpi in March, 1900, and as this performance among the Hopi has never been described, a few notes on this little-known ceremony will be presented.¹ It is said by all the Hopi, and by the few white men who witnessed it years ago, that the Buffalo-dance is on the decline, the presentations given in late years lacking the elaborate character of earlier performances. This is ample reason why that which now survives should be recorded before it completely disappears.

The Buffalo-dance is not accompanied by secret rites, and lasts but a single day. The two principal personators, known as the Buffalo-youth and the Buffalo-maid, dance at intervals during the day, while a chorus of singers, one of whom beats a wooden

¹ Personations of the bison by masked men in kivas or in secular performances are mentioned in the author's account of the theatrical dramatization at Walpi in the *Proceedings of the Washington Academy of Science*, vol. 1. From what the author has learned of the Sun-dance of the "Plains Indians," through those who have observed it, he is inclined to regard it as primarily a ceremony the object of which was to increase the buffalo herds, with initiation features. Among the Hopi it is merely a survival, the action having outlived the meaning.

drum, furnish the necessary accompaniment. In former times, especially at Hano, where this dance was celebrated with considerably more fervor and ceremonial detail than at present, the advent of the personators was dramatized in a more realistic way. The Buffalo-youth and the Buffalo-maid donned their costumes far out in the plain, and the people went down the trails to meet and to escort them to the pueblo. There were also accompanying secret rites, but of late these have been abandoned.

BUFFALO-MAIDS AND -YOUTHS

Two young men and two girls participated in the Buffalo-dance witnessed at Walpi in 1900. They dressed in the kivas and did not leave the mesa. Their apparel and symbolism were as follows: the distinctive facial markings of the maids were two parallel lines on each cheek; each wore a sun-shield on her back¹ and carried a notched stick, called a "sun-ladder," in her hand. Ceremonial blankets completed their costume.

The youths wore wigs of sheepskin (formerly these were of buffalo skin), stained black, the pelts hanging down their backs. These wigs had artificial buffalo-horns, and embroidered bands extended across their foreheads. Each carried a zigzag stick, representing lightning, in his hands. Ceremonial kilts and sashes completed the costume of the youths.

The dance had a lively movement as compared with the solemn, rhythmic step of the Hopi *kateenas*, that of the male personator suggesting the movement of the buffalo. The Buffalo-youth pranced about the Buffalo-maid, now and then running the length of the plaza and pretending to spear the earth with his notched or zigzag stick. This action possibly symbolized the fertilization of the earth; indeed, one is tempted to suppose that it was once a signature prayer to make the earth yield buffaloes,

¹ Hopi tradition relates that the Sun brought this cult to the East Mesa, but comparative studies show that the connection between the buffalo cult and the sun cult was deeper than the Hopi now appreciate.

but if this were actually the case, the Hopi have lost all knowledge of its primal significance. The movements of the Buffalo-maids were confined to a slow turning of the body, raising on tiptoe and swaying back and forth. Each maid held in each hand, extended before her, a notched stick called a "sun-ladder," elsewhere described.¹

THE CHILDREN'S DANCE

The tendency of children to imitate their elders is universal, and to show that Hopi children are no exception, a few lines will be devoted to a juvenile *Katcina* dance witnessed by the author at Walpi on January 16th, 1900. This dance is called *Wahikwinema*, or "Go-throwing dance," because at its close one of the boys who participates throws piñon-nuts to the assembled spectators. About fifteen boys and girls, none more than fifteen years of age, took part, each dressed in a ceremonial kilt and a blanket; their bodies were painted, and feathers were tied in their hair. No masks were worn, and the boys and girls were dressed by their elders in one of the kivas. Each of the little performers carried a rattle, and they danced and sang as do their elders in the regular ceremonies. Some of the children were so small that they were carried into the kivas in the arms of their fathers to prevent them from slipping or falling from the ladders.

At the close of the dance the children threw to the spectators small packets of corn-mush (*somipiki*) and piñon-nuts. A chorus of spectators, mostly adults, sang as the children danced, and one of their number beat a drum. This dance is not a sacred one, but a secular imitation encouraged by the parents as child's play. One or more of the participants may have had a knowledge of the fact that real *katcinas* are simply representations of gods, but the majority believed, as do all Hopi children before the ceremonial flogging by which they are initiated, that the

¹ *American Anthropologist*, April, 1899.

masked beings which from time to time perform in the public plazas are as truly realities as is "Santa Claus" to some of our own children.

CONCLUSION

While this brief notice of the children's dance closes this article, it by no means exhausts the subject of Hopi minor festivals. It only leads us to the threshold of secular festivals and customs, to consider which would unduly enlarge the present paper. Nothing has been recorded of a pretty little custom at the time of wood-gathering, when the men, laden with firewood, return to the pueblos and are met by the girls of the village; nor of the rabbit-hunts and their attendant festivities. The planting and "harvest home" festivals still await description, as do the salt gathering, the clearing out of the springs, the games in the plaza when one pueblo plays against another, or in the kivas when women contest with the men, as in the cup game, *cocotukiwi*. Then there are the strictly family festivals, such as child "christening," when the baby is dedicated to the sun,¹ puberty and marriage festivities, and mortuary rites which differ in the several villages. The house-building "bees" by the clan should not be overlooked, and the primitive markets are well worth consideration in a complete description of Hopi minor festivals.

The subject has many ramifications, to follow which would introduce numerous widely different customs, among which are the harvest exercises on the farms, when maize is roasted in great pits; rites in the kivas at the time of epidemics for the purpose of averting sickness; and ceremonies about the body of a Hopi killed by lightning. All of these and many others have changed more or less in the ten years since the author began his studies of these interesting people. Hopi aboriginal life is fast fading into the past and the time for gathering ethnological data is limited.

¹ See J. G. Owens, in *A Journal of American Ethnology and Archaeology*, vol. 11.

The author, in closing, would suggest that a record of the variations of the same Hopi festival in different pueblos is important. The more detailed the descriptions are made, the greater the differences of the same ceremony are found to be. These variations are due in part to syncopation, in a much greater degree to modification and addition, but most of all to diversity in the clan organization and clan predominance in the priesthoods or among the participants. A great festival is a mosaic added to by incoming clans or abbreviated by the death of others. It is continually changing as the sociology of the pueblo changes, and possibly a knowledge of these variations may be of value in tracing the evolution of the ritual.

While the great Hopi festivals in the different pueblos differ in the form, number, and detail of their altars, in the number and intent of their personators, and in many other particulars, they have certain elements in common. The author believes these local modifications, like the composition of the pueblos themselves, are comparatively modern. The population of each pueblo is formed of clans united in different proportions; each great festival is a similar union of rites in which those of one or another clan predominate. Some of these rites can be definitely assigned to the clan which brought them, others cannot. In the former case, aided by tradition, we can trace the rites to certain pueblos, now in ruins, where the clans once lived, but only in a limited way, for the trail becomes obscure a few hundred miles from the present Hopi villages.

BOOK REVIEWS

Archæological History of Ohio. The Mound Builders and Later Indians.

By GERARD FOWKE. Columbus, Ohio. Published by the Ohio State Archæological and Historical Society, 1902. 8°, xvi, 760 pp., ills.

The Ohio valley, particularly that part of it lying within the state of Ohio, has been the subject of many books, articles, and reports; but no work up to the present is so comprehensive as that written by Mr Gerard Fowke and now issued by the Ohio State Archæological and Historical Society.

In all of his writings Mr Fowke has displayed more or less aggressiveness toward others who have been engaged in the same field of research, and his vigorous denunciation of all theories or observations in which he himself does not concur may be admired even by those who do not agree with him. Early writers conveyed the impression that a high degree of culture prevailed in ancient times throughout the mound region; but in this they were manifestly wrong, as has been shown by the results of recent explorations by trained students. Naturally, when such a reaction occurs, particularly in a science so new as American archeology, the tendency is to go to the other extreme. Mr Fowke is not only a student of American archeology, but a practical field-worker, and when he confines himself to his field observations, he does not take the view that the earthworks of the Ohio valley were built after the discovery of America. It is true he does not assert that the Ohio mounds are very ancient, but he is explicit in stating that no European objects have been found in them. His conclusions (pp. 469-472) are arbitrary, to say the least, for in presenting them he disregards the testimony of the Hopewell, Turner, Mound City, Liberty, and other "high culture" groups.

Those who have closely studied Ohio archeology may not clearly understand the statements made on page 471:

"Any statement, drawing, or description of remains which attempts to show that the Ohio Mound Builders were a race essentially different from, or of a higher grade than all other native tribes of the United States, or even of the Ohio valley, is not justified by any evidence so far discovered.

"And the contrary assertion that they were the ancestors of any tribes living north of the Ohio river, of whom historical or traditional knowledge has been handed down to us, is equally without proof.

"We simply do not know who they were.

"But we have abundant reason for asserting that in no particular were they superior to, or in advance of, many of the known Indian tribes."

These broad assertions are deliberately made. In the first he uses the word "race," and in the second "tribe." He evidently recites a favorite expression used by early writers when he employs the former term, for no recent student of the subject believes that the Mound-builders were a separate race of people. Racial and tribal differences need no comment here. As to the first sentence we will all agree; but as Mr Fowke uses the terms "tribe" and "race" interchangeably throughout his treatise, he may mean "no tribe essentially different," etc., in which case I would take positive grounds against his assertion. The local culture of the lower Scioto was not only higher than it was elsewhere in the state, but it was more highly developed than anywhere else in the United States, save one locality. Why should the field testimony be cast aside? The second sentence is substantiated by field explorations; but in the last we may take exceptions to his claim that "in no particular were they superior to," etc. The Pueblo peoples may show a higher culture grade; other tribes of the United States did not, for, if they did, why did they not construct enclosures and forts and other remains comparable with those of Ohio? Had Mr Fowke been present during the Hopewell explorations and observed the conditions under which so many strange objects made of foreign substances were found, his fairness when considering field testimony alone would have led him to form a different conclusion. But the author unfortunately casts aside all evidence which he cannot personally see and handle. I do not say that a personal inspection would have resulted in his entire conversion, but I do maintain that he could not see those deposits and interments, and then express the belief that the people who made them were no higher in culture than the Diggers, the Miamis, or the Sioux. In his lectures and publications, Professor Putnam, our most competent observer on Ohio, takes the ground that the lower Scioto was occupied by a tribe ranking higher than the tribes of the surrounding region.

Eighty or ninety pages of Mr Fowke's book are devoted to demolishing theories that were published many years ago. Very few of these early observers are quoted at the present time, and many of them are practically forgotten; therefore it is difficult to see why the author

should have resurrected their fallacies and have held them up to ridicule and contempt. Along with the obsolete authors he condemns real authorities. Few investigators escape criticism. Archeologists and historians will be interested in the book, and in order to read both sides they may consult the early writers, but laymen would not have thought or known of these old and exploded theories had they not been given the space, which would have been devoted to better purpose had the author quoted more extensively from the reports of such field-workers as Putnam, Holmes, Metz, Mills, and himself.

Mr W. C. Mills' important investigations of the last few years are almost entirely omitted. Squier and Davis' book is more frequently quoted than any other, and yet Mr Fowke speaks disparagingly of the observations of these pioneers in American archeology. They made mistakes, and many of their measurements are imperfect, but other of their observations and surveys are not only accurate, but they have not been approached in point of excellence by any recent work. In the matter of illustrations, Mr Fowke's plans and drawings of various works in Ohio are not to be compared with the splendid maps and plans given us by Squier and Davis more than half a century ago. Indeed, it is unfortunate that the author has marred his otherwise generally excellent work by such small, inadequate, and poor illustrations.

In many places Squier and Davis are cited because their measurements are not in accord with those of the author, who ignores the fact that the diameter of an embankment or of a mound may have been changed from three to thirty feet through continuous cultivation. The Hope-well exploration, for example, showed that the Effigy mound was originally much higher and narrower than even in Atwater's time; today it is nearly one-half larger and broader than it was found to be in 1891. Applying to this Mr Fowke's method of reasoning, the earthwork could never have had the dimensions assigned to it by early observers.

The chapter on Flint Ridge gives an exhaustive account of that famous site. The pages devoted to the manufacture of implements and to the finished products are also, with the exception of a few remarks on ceremonial stones, above criticism. In such descriptions and in field work the author is seen at his best, and the critical student would be unjust did he not accord due praise in these directions. It is only in Mr Fowke's attitude toward others, in which there is manifest such a spirit of intolerance, that he is open to severe criticism.

In his conclusions (p. 470) the author cautiously suggests that there were several different tribes in Ohio, and that "the cairns and the rude stone heaps point to a third race [tribe?], perhaps nomadic." In these

remarks he virtually admits the presence of different tribes, a fact which, I had thought, had been established by explorations conducted from 1887 to 1896.¹ It is suggested that future excavations may establish a fourth tribe, i. e., the people who buried in gravel hills as distinct from the Shawano trench burials or graves. Now, these tribes may or may not have belonged to the "long and short heads" over which there has been much discussion. On page 133 of the book appear two quotations from Professor Putnam regarding dolichocephalic and brachycephalic forms of crania, indicating the presence of two types of people, not only in Ohio, but in the United States at large. He makes no comment on these apart from saying that the conclusions are interesting; but when the present writer takes up the same subject based on his explorations in many parts of Ohio, Mr Fowke takes him to task in a manner that savors of unfair discrimination.

Again, the author has no patience with students who attempt to give the age of trees by means of their circles of growth. This method of determining age is uncertain, as all know; but there is one tree near Mr Fowke's home which he might have mentioned with propriety. It is the Logan elm, which was a very large tree more than a hundred years ago when John Boggs built his cabin beside it. The tablet upon the site of Boggs' settlement sets forth the fact that near the elm Logan made his famous speech in 1774, but, of course, no one knows how old it was at that time. Mr Fowke does not speak of the many oaks growing upon the earthworks, confining his remarks to trees of rapid growth. In connection with his Chicago elm I may mention one planted by my mother at Xenia, Ohio, just fifty years ago, and which is now about fifty inches in circumference two feet from the ground. Some of the lower Scioto lands were cleared of timber more than a century ago. Atwater, writing of times nearly ninety years past, speaks of the largest oak and other timber growing upon the mounds. An oak three hundred years old in Atwater's days would indicate that the earthwork on which it stood had its origin at or before the discovery of America. Does Mr Fowke hold that no tree of that age grew upon the works?

On page 514 he mentions some "finely carved 'ceremonial stones,' found so abundantly throughout the Ohio valley and known to have been in use among the Indians," etc. I have not been able to find any reference on the part of early travelers to "ceremonial stones" in use among the Ohio Indians. Mr Fowke should have given his authorities,

¹ *Ohio State Arch. and Hist. Soc. Publications*, vol. V, p. 262. *Primitive Man in Ohio*, pp. 79, 112, etc.

for these objects have caused much discussion and they manifestly merit more than a mention without reference to their specific use. But this is a slip such as any one is likely to make; yet a statement of this sort in the work of another would bring forth some such characteristic expression as "Absurdity can go no further"; "Utterly worthless"; "The imagination balks," etc., for in these Mr Fowke's book abounds. However, one would be prejudiced, indeed, did he not accept honest criticism. In accepting and publishing Cresson's statement that certain nodules, out of which were made the Hopewell discs, were taken from the slate hills along North fork of Paint creek, two miles from the group, I was in error. At that time I had no reason to doubt the correctness of Mr Cresson's observations. Mr Fowke's criticism (p. 629) of my published statement is entirely proper, and I am glad of the opportunity to make the correction.

With his wide field experience and the quantity of material at hand in the Society's museum, Mr Fowke might have drawn comparisons between the mound sites in the different valleys of Ohio. Although he contends that no line should be drawn between surface and mound finds, he would have observed differences, and I am surprised that he should make such a claim. The Shawano and other modern sites have nothing in common with those of prehistoric times. But the space will not afford a full discussion of this important subject of comparison. Mr Fowke's argument that, because the Nez Percés produced Joseph and the Shawanos Tecumseh, these tribes were equal in point of culture to the mound-building tribes, is not well taken, because, for aught we know, the builders of the mounds may have produced at least the equals of either of the celebrated Indians mentioned.

It is unfortunate that the technic of types in Ohio should be neglected, for the field is known better than any other area of similar size. Without theorizing, — which he detests, — Mr Fowke might better have devoted the four-score of pages in which he has made sport of the visionary observers of long ago, to a catalogue and a comparison of types and thus have benefited both the archeologist and the layman.

My criticisms apply to technicalities and to the impression conveyed by the book that prehistoric remains in Ohio indicate nothing of consequence. On the whole the book will do good, for it is a noteworthy contribution to the literature of the archeology of Ohio, and both the author and the Society are to be congratulated.

WARREN K. MOOREHEAD.

Memoirs of Explorations in the Basin of the Mississippi. Volume V. Kaskaskia. By J. V. BROWER, . . . with a contributed section by N. H. WINCHELL, . . . St. Paul, Minn.: 1902. 126 pp., 26 plates, 13 figures, 5 maps, 4^o.

Mr Brower, President of the Quivira Historical Society, Saint Paul, Minn., has been for a number of years an enthusiastic student of the Northwest, and has published several memoirs on the history, geography, and archeology of that region. His work is characterized by care and accuracy in the collection of data and by caution in reaching and announcing conclusions. In his researches at Little Falls, Minn., he has been so fortunate as to have associated with him Prof. N. H. Winchell, President of the Geological Society of America, whose well-known attainments as a geologist are supplemented by a mastery of the fundamental problems of American archeology. Mr Warren Upham, Secretary of the Minnesota Historical Society, and Mr J. B. Chaney also took part in the exploration, which was conducted with all possible care under eminently favorable conditions.

The report is presented in four sections. Section I deals with the earlier explorations at Little Falls and the publications relating thereto. Professor Winchell was the first to study the archeological phenomena of the site (1877). He observed the occurrence of objects of flaked quartz at a depth of three or four feet in the sands and gravels, and expressed the opinion that this indicated the presence of man in the region in pre-glacial times. He also reached the conclusion that the mound-builders, since their remains are associated with superficial deposits only, should be identified with the Indian tribes of the present period.

In 1878 Miss Frances E. Babbitt made collections of the shaped quartzes from the surface on the river bank, assigning them to a definite horizon at the base of the glacial deposits, and classifying them, under advice from Professor Putnam and others, as paleolithic.

The third explorer was W. H. Holmes, who, in 1892, made excavations at the point from which Miss Babbitt obtained her collections, and found that the objects were not confined to a particular stratum near the base of the series, but occurred in superficial deposits subject to disturbance from various causes; that they were thus probably the work of tribes known historically.

Later (1899) Mr Oscar H. Hershey explored the site and was led to believe that all the quartz objects were post-glacial and of comparatively recent origin.

Section II describes explorations conducted by the author.¹ The

¹ Invitations to be present during the examinations were extended to a number of

geological history of the Falls locality is reviewed, and the origin and relations of the various deposits concerned in the researches are, as understood at the present time, fully expounded. The archeological work was taken up with a clear understanding of the problems to be considered. Excavations were made at various crucial points, and the published photographic views disclose the character of the formations, as well as the position of the included artifacts. The objects secured have been carefully preserved by Mr. Brower in museum jars in his private collection, and illustrations of these (plates 8 to 14) accompany the volume.

Section III is devoted to a study of the full range of local relics and remains. Four classes of these are recognized: (1) those relating to the white population, 1659-1901; (2) those of the Ojibwa occupancy, beginning about 1750; (3) those of the Siouan (mound-builders) occupancy, given a time limit not exceeding two thousand years; and (4) those of glacial time, covering an indefinite period beginning some ten thousand years ago. Distinctions are drawn between the artifacts of the glacial race and those of the mound-building tribes, and a period of indeterminate length is assumed by the author to separate the disappearance of the former people and the appearance of the latter. The conclusions that man was present in the basin of the Mississippi before the ice-sheet of the last glacial epoch had disappeared from the northern part of Minnesota and that his culture was paleolithic, are strenuously enforced.

Section IV is a discussion of "The geology of the Mississippi valley at Little Falls," by N. H. Winchell. We have here a full analysis of the geological conditions beginning in glacial times and extending down to the present, and a discussion of these phenomena in their relations to the history of man. Professor Winchell distinguishes four steps in the glacial geology of Little Falls, and his review of the previous studies of the site and his statement regarding "the result reached by the present investigation" are so clear that they should be quoted in full (page 101):

"(1) *The glacial epoch proper*, when ice covered the country to a great thickness and extended indefinitely southward.

"(2) *The gravel accumulating epoch*, when the ice-margin was at or but little above Little Falls. It was so near, and the slope of the ice was so precipitous, that the materials supplied by the glacier were immediately washed by the glacial waters, the clays being carried away, while the gravels were spread in stratified assortment over the till sheet

persons, and the present writer regretted most sincerely his inability to take part in the work.

which still underlies them. The ice-margin continued to retreat northward, forming a sheet of stratified gravel and sand all the way, but

"(3) At Little Falls during this retreat was the *extended river and ice-jamming period*, marked by the disturbance of the upper part of the gravels and by the introduction of the quartzes.

"(4) The shrinkage of the river to its present size and the *cutting of the narrow present channel*. This epoch may have lasted 10,000 years and continues to the present.

"The opinion of Miss Babbitt that these chippings are of glacial age was based on faulty observation. She explored the east bank of the river at 'The Notch,' where she reported the finding of a continuous layer of quartz chippings underlying the major part of the glacial gravels. She also failed to notice that they occur on the surface generally at that place. Her errors have been pointed out fully by Prof. W. H. Holmes,¹ and her conclusions are shown to be invalid.

"Mr Warren Upham accepted in the main the work of Miss Babbitt and reached the conclusion that the man who chipped the quartz lived at Little Falls during the accumulation of the undisturbed gravels, i. e., that the ice was still present in the immediate vicinity.² He made no distinction between the disturbed and the undisturbed portions of these gravels. It is now known that the chips do not occur in the undisturbed gravels.

"Profs. Putnam and Haynes also followed the descriptions and conclusions of Miss Babbitt, supported as they were by Mr Upham.

"Prof. W. H. Holmes made a thorough examination of the locality, and published his conclusions in April, 1893.³ The writer accompanied Prof. Holmes and concurred in his findings that the quartzes described at 'The Notch' by Miss Babbitt were not in, nor below any normal glacial deposits, and that they are, on the other hand, found only in surface materials of the general flat on which the city is built. Mr Holmes reached the conclusion that all the chippings are quite late, certainly postglacial, and probably due to the existing Indian tribes. This result may have been reached in part by reason of the existence of quartz chippings immediately associated with other implements in the very surface materials, even in the soil, in groups and pockets, such as can be attributed readily to the present Indian. These are found on the west side of the river, and on the lower terraces all the way to Pike Rapids, and probably extend widely.

"Mr O. H. Hershey first differentiated these modern chippings from those found in the disturbed glacial gravels,⁴ and assigned a probable later date to the former. This distinction seems to be important and tends to weaken any conclusion that ascribes all the chippings to one and the same date and origin; and it tends to separate under different causes a lot of facts that have been looked on as attributable to a single cause.

¹ *American Geologist*, vol. xi, pp. 218-240, April, 1893.

² *Ibid.*, vol. xiii, p. 363, 1894.

³ *Ibid.*, vol. xi, pp. 218-240, 1893.

⁴ *Ibid.*, vol. xxiv, pp. 283-294, 1899.

"The result reached by the present investigation differs from all the foregoing. It recognizes a period of 1,000 or 2,000 years during which the Mississippi flowed as a majestic river past the site of Little Falls, submerging all the plain from two to two and a half miles wide between the outer drift bluffs. This was wholly subsequent to the accumulation of the glacial gravels. It was during this period that these chips were formed, and were introduced, probably by floating and jamming ice and floodwood, into the uppermost three or four feet of those gravels. The quartz and slates must have formed a small projecting knob above the surface of the water, and probably there was annually considerable dry land in the immediate vicinity on which the quartz chippers did their primeval work. Since that time this projecting knob of quartz and slate has been greatly reduced, but it has always formed an interesting obstruction in the current of the river. The overthrow of trees by tornadoes and the action of burrowing animals may have contributed later to the disturbance of these gravels, but they seem to be insufficient to produce the grand effect. The quartzes must have preceded the disturbance, and the only adequate cause of the disturbance is one that acted, as it appears, while the river was swollen by glacial waters coming from far north. That makes the chippers post-glacial, but much earlier than the present Indian."

The differentiation of the superficial "disturbed" deposits (No. 3) from the underlying stratified gravels, is a very important result, and Professor Winchell may be right in his interpretation of their age and of the manner in which the flaked quartzes were introduced. Even though this interpretation should be accepted, however, it can hardly be claimed with safety that a quartz-chipping site on a rock and a sandbar in the midst of the wide flood-swept river would contain so full a representation of the culture of the people (if such existed) as to enable us to determine its status. There is, however, nothing inherently improbable in the proposition that the Mississippi valley was inhabited during the period which witnessed dawning civilization of the Nile seven or eight thousand years ago, or in the theory that the culture of this people was so primitive as to be properly called paleolithic.

Section V gives "Conclusions based on ascertained facts and acquired knowledge," by J. V. Brower, who, under eighteen heads, presents a résumé of the geologic and archeologic evidence and the conclusions reached. An Appendix to the volume includes a letter from Professor Winchell, and a brief paper on "Man in the Ice Age," by Mr Warren Upham.

This publication marks a decided step in advance in the study of early man in America. The researches were deliberately planned and the methods employed were thoroughly scientific, and the fortunate combination of talent enlisted must command for the work respect of all students of the history of man.

W. H. HOLMES.

Certain Aboriginal Remains of the Northwest Florida Coast. Part I.
By CLARENCE B. MOORE. (Reprint from the Journal of the
Academy of Natural Sciences of Philadelphia, vol. XI.) Phila-
delphia: 1901. Pp. 471-497, 2 maps, 121 figures.

This is the ninth publication of the quarto series of works by Mr Moore on the archeology of the Southern states. It is a valuable contribution to knowledge, and, on account of the liberal use of half-tone illustrations, presents an unusually attractive appearance. Mr Moore has conducted these explorations personally, and is himself defraying expenses of field-work and publication. Such are the character and extent of the work accomplished that he may well be accorded first place among archeological explorers within the area of the United States, if not, indeed, in all America. His field has been limited to a few of the Southern states, but his researches are so planned that the observations of one area properly connect with those of the adjoining areas, making the work a unit. It is to be hoped that these investigations will be continued to the westward along the Gulf coast until Mexico is reached and much needed light is thrown on the relations of the culture of the mound-builders of the great Mississippi valley region to that of the pyramid-temple builders of central Mexico.

This particular volume describes explorations at various points between Perdido bay on the west and the eastern end of Choctawhatchee bay on the east, a distance of 160 miles. Here the tidewater shores of the bays and inlets are dotted with ancient dwelling sites and mounds. The dwelling sites in some cases show considerable elevations, formed of kitchen refuse and of sand purposely accumulated, and contain implements of stone, shell, and bone, and fragmentary pottery, while the mounds are composed mainly of sand, and, in a majority of cases, were doubtless built for mortuary purposes. One large mound, subrectangular in outline and twelve feet in height, had a flat upper surface and a graded way leading to it, indicating that it had served as a village site. It had been used also as a burial-place.

It is fair to assume that the occupants of these sites belonged, in large part at least, to the Muskogean stock—perhaps to the Creek nation of historical times. Accounts furnished by Cabeça de Vaca, a prisoner for seven years among the tribes of the region, in the early half of the sixteenth century, indicate a sedentary or semisedentary people of no particular energy or accomplishments, living from hand to mouth, and often in dire need of the necessities of life.

Excavations in the various middens and mounds yielded numerous stone, shell, and bone implements of usual Southern types, and large

quantities of pottery. The latter product is characteristic of the region and differs decidedly from the ware of the Lower Mississippi section on the west, the upland country on the north, and the Florida peninsula on the east. Although it has points of close correspondence with the pottery of all these regions, it is decidedly inferior in form and decoration to the pottery of the west. Much of the midden ware appears to be closely related to the culinary pottery of the Appalachian area of Georgia and the Carolinas, being characterized by the peculiar check-stamp finish of the surface.

The illustrations display many of the better pieces to excellent advantage. These are nearly all from graves where, in many cases, they were inverted over human remains, especially over the skull, as if for protection. Only one instance was noted of the inhumation of the bones within a vessel placed upright, a method prevailing in the neighboring Appalachian region. The bones rarely showed marks of fire and were generally dissociated, the skull and a few of the larger bones only occurring in the graves. A striking feature of the mortuary pottery of this region is its mutilation. Nearly all the pieces have been perforated by breaking out the base or piercing it with a sharp implement; the idea, no doubt, was to destroy the mystic life with which the native imagination had imbued the vessel. It is noted also that the custom of modeling rude vessels for use as burial tokens, so common in peninsular Florida, was practised to some extent in this district.

Implements and other objects of iron, glass beads, and a Spanish coin (date between 1521 and 1550), were recovered from the graves and indicate clearly that inhumation and mound-building continued after the coming of the whites.

The pottery consists of vessels of a very wide range of form, though seldom of large size. The platters, especially the scalloped, six-pointed form, are peculiar to the region; the bowl is a leading form and is often handsomely decorated. Pots are not common, and bottles are rare. Effigy forms are met much less frequently than in the Mississippi valley, although it is not uncommon to find vessels of varied shapes embellished with animal features, such as the heads of birds, men, and reptiles in the round, while these and other features are modeled in lower relief or engraved on the body of the vessel. A careful study of the ceramic ware makes it clear that the potter considered the life idea essential to the vessel. The animal forms, while presented in some cases in a somewhat realistic manner, are found to occur in all degrees of modification until purely geometric combina-

tions of lines are reached, and it may readily be believed that all the decorations, howsoever completely conventionalized and elementary, were referred by the potter to some living prototype.

This valuable contribution is supplemented by a second paper on "Certain Aboriginal Remains of the Tombigbee River," pages 498-516, 1 map, 5 figures.

Researches vigorously prosecuted for six weeks in mounds along this river produced meager results in the way of artifacts. The practical absence of pottery is somewhat surprising, as this art was practised almost universally in the south. Bunch burial was common, the bones of numerous individuals having been deposited together without order.

W. H. HOLMES.

Premiers essais de sculpture de l'homme préhistorique. Par ISAÏE DHARVENT. Rouen: Imprimerie Julien Leclerc, 1902. 35 pp., 9 plates.

The subject of intentionally "retouched" flints and other stones from the *diluvium* has given rise in the last few years to a somewhat acrimonious discussion among archeologists and geologists, the literature of which is constantly increasing. The present well-illustrated pamphlet is a "notice and description of a collection of flints from the lower *diluvium* of northern France, intentionally retouched to make human and animal forms." The author, now a member of the Committee on Prehistoric Monuments in Pas-de-Calais, was led, in 1881, by chance reading of Boucher de Perthes' *Antiquités celtiques et antédiluviennes*, to devote himself to the task of proving the existence of these "pierres-figures" or "pierres-images" of which that master had written. At the Pas-de-Calais Archeological Exposition of 1896, M. Dharvent exhibited a collection of seventy such flints from various localities in that department, which proved of considerable interest, but failed to convince the archeologists *nom Fach*. The question was brought up by M. Thieullen (the author of several papers in the French anthropological journals) at the Congress of 1900, but with little more success. In the case of M. Dharvent there has occurred no such deception on the part of laborers or assistants as is said to have discredited some of Boucher de Perthes' data, so the matter is one of "retouching" or not. The same question was raised at the Congress of 1866 by M. Chatel, who then failed to convince the scholars of the day. Of French archeologists, the following, among others, have refused to recognize the "retouched flints" of MM. Dharvent and Thieullen as anything more than *lusi natura*, simple accidents, effects due to cold, heat, frost, etc.:

Adrien de Mortillet, Salomon Reinach, A. de Marsy, M. Boule, and M. Capitan. Professor Montelius and Sir John Evans have also expressed themselves as unconvinced. The Abbé Breuil and M. Gossélet seem more favorably disposed. If anything could convince one it would be the beautiful figures of the plates accompanying this essay, but, as the "forms" which the mind's eye makes of ink-spots warn us, we cannot doubt but that here also the imagination plays its wonted rôle. The figures of monkey-profiles, human faces and skulls, heads of monkeys, sheep, dogs, squirrels, deer, boars, frogs, etc., are easy to see because M. Dhervent tells us where to look for them,— they are like some "puzzle-pictures," which, once seen, are hard to get out of the mind. M. Dhervent admits that he has no better arguments to support his position than had Boucher de Perthes, but considers such ocular evidence as that presented by the simian profile of plate ix to be incontrovertible.

The theory of "pierres à retouches" has also developed in England. In two letters to the *London Times* (Sept. 3, 7, 1901), the Hon. Auberon Herbert writes of his discovery, in the gravel beds of the Avon valley in South Hampshire, of a mass of worked stones, the greater number of which "are representations of the tokens of the tribes,"— suns, moons, animals, birds, fishes, mountains, parts of the human body, etc. Here we have, if we believe the Honorable Herbert, "a new volume of *Totemism* suddenly placed in our hands." In *Man* (London, 1901, 149-151), Prof. A. C. Haddon rightly observes that "whatever the stones may be, they can never be proved to be totems or representations of totems." There is the strongest reason for refusing even to believe them artifacts. It is worth recalling that Boucher de Perthes (and Chatel after him) found "symbolic signs" and a "hieroglyphic language" of antediluvian man in the shapes of men and animals he saw in the stones of the river-drift. So the theory of "totemism" is hardly new. The reviewer cannot escape the conclusion that, on evidence now in hand, the "retouched stones" represent an interesting chapter in "the scientific uses of the imagination." The mind of twentieth century man, not the hand of prehistoric man's precursor, has done this.

ALEXANDER F. CHAMBERLAIN.

The Huntington California Expedition. Maidu Myths. By ROLAND B. DIXON. (Bulletin of the American Museum of Natural History, vol. xvii, part II, pp. 33-118.) New York: June 30, 1902.

Lying between the cultural area of the Northwest coast and that of the Pueblos, flanked on the east by the widespread Shoshoni tribes

of the Basin, and divided linguistically, so far as we now know, into more than fifteen distinct stocks, the Indians of California present many points of peculiar interest. Unfortunately this field has hitherto not received the attention it deserves, and it forms a serious hiatus in our knowledge of North American peoples. Now, however, the gap bids fair to be soon filled. We have Curtin's *Creation Myths of Primitive America*, drawn from the Yana and Wintun tribes, and these twenty-two Maidu tales are another excellent contribution to the same end.

The first six pages of the bulletin give an interesting introduction to the tribe. On their location and subdivisions Dr Dixon says:

"The Maidu is spoken in three dialects, which may be designated as the northeastern, the northwestern, and the southern. The first of these is spoken by that portion of the stock living in the chain of broad, flat-floored valleys in the higher Sierra, beginning with Big Meadows in the north, and ending with Sierra Valley in the south. The second group occupies all the western slope of the Sierras and the Sacramento Valley north of the Yuba River. The third group comprises all the remainder, and, roughly speaking, is synonymous with the Nishinam of Powers. The various groups came into contact with different stocks in varying degree, and all show the influence of such contact. The northeastern group came into close contact with their northern neighbors, the Achomawi, or Pit River Indians, and with the Piutes who border them on the east. The northwestern group were associated with the Wintun of the west side of the Sacramento River, and with the Yana who occupied the east side of the river, above Deer Creek. The southern section of the Maidu stock were in contact with the Washoes, with peoples of the so-called Moquelumnan stock, and with the Wintuns. The contact of the sections of the stock with different neighbors led to noticeable differences in culture, myth, and dialect; and these tendencies toward varying cultures were in many cases re-enforced by considerable differences of environment."

The more permanent dwellings of these people evidently resembled the semisubterranean houses of the interior Indians of Washington and British Columbia. "In their social organization the Maidu showed apparently a complete lack of any clan organization or totemic grouping. . . . The chief ceremonials in the religion of the Maidu were the initiatory ceremonies for the boys or young men at or about the age of puberty, and the great annual 'burning' for the dead." It is interesting to learn that all boys do not go through the first of these ceremonies, but only such as are annually chosen by the old men. "The 'burning' . . . was not that of the body of the dead, but of offerings of various sorts,—a common ceremonial for the dead in which the whole village or several villages joined."

Outside of Curtin's work, above cited, so few studies have been

made of the surrounding tribes that, as Dr Dixon points out, a satisfactory comparative discussion of the Maidu myths is impossible, but he has indicated the closest analogies with those of the nearest tribes that have been investigated. In the "Creation Myth," which strikes one as quite philosophical, Turtle procures earth from the bottom of the primeval ocean in the same way as is related by our eastern Indians. Other stories resemble the "Transformer" tales of Oregon, Washington, and British Columbia. The story of the one-legged man (*Huptoli*) recalls a similar Haida conception. As throughout the California area, Coyote takes the place of Raven, Bluejay, Spider, etc., as "trickster."

The "Abstracts" with which this bulletin closes should be of the greatest convenience to mythologists in future comparative studies. It is to be hoped that similar investigations of the California languages will soon follow.

JOHN R. SWANTON.

Il precursore dell'uomo (Pithecanthropus Duboisii). Nota riassuntiva del PROF. ENRICO MORSELLI. Genova: Fratelli Carlini, 1901. 19 pp.

In this reprint (with annotations) from his *Antropologia Generale*, now in press, Professor Morselli, the distinguished Italian anthropologist, résumés the question of the *Pithecanthropus*. Up to date the majority of French authorities (Manouvrier, Hovelacque, Verneau, Zaborowski, Pettit, Lapouge, *et al.*) with some Germans (Haeckel, Nehring, Schwalbe, Kilsner, Jäkel), the Italian Neviani, and the American Marsh agree with Dubois in looking on the *Pithecanthropus* (as determined by the cranium) as a transitional form. The majority of English scientists (Turner, Cunningham, Keith, Lydekker, Keane, Lubbock, Ray-Lankester, *et al.*) are inclined to regard him as man, as do also a number of continental anthropologists (Ranke, R. Martin, Metschie, Topinard, Houzé), German, French, Belgian. The majority of German authorities (Virchow, Waldeyer, von Luschan, Krause, Hamann, Kollmann, Volz, *et al.*) hold the *Pithecanthropus* to be an ape, as do also the Englishman Thomson, the Italians Branco, Giglioli, and Sergi, and the Hollander ten Kate. Of twenty eminent naturalists who up to the fall of 1896 had examined or studied the skull, six attributed it to a man, six to an ape, and eight to a transitional form; the femur was ascribed by thirteen to a man, by six to a transitional form, and by one to an ape; the third molar was judged human by four, simian by six, and to belong to a transitional form by eight; the second molar was assigned to an ape by two and to the transitional form by five. Within the limits expressed above, the divergences of

opinion are very great. Rosenberg allies the *Pithecanthropus* with the *Cebidae*; Virchow, Flower, and Krause see the remains of a large extinct gibbon; Newton a new species of *Hylobates*; Garson a species of Primate extinct in the Pliocene; Schwalbe a more or less generic form, intermediate between the anthropoids and the Neanderthal race; R. Martin and Lapouge make him a sub-genus below man, of which the second recognizes two species: *P. erectus* (of Java) and *P. Neanderthalensis* (of Europe); Keane makes the *Pithecanthropus* "the first man," and Keith names him *Homo pliocenus*; Houzé styles him *Homo javanensis primigenius*, seeing in the *Pithecanthropus* merely the first Java representative of the human species; Topinard goes some distance toward identifying him with the race of Neanderthal; Ray-Lankester declares the remains to be those of "a microcephalic idiot," in support of which view Mies produces a Dutch pathological cranium of like dimensions. These varieties of opinion doubtless represent different currents of scientific thought and the attitude of the diverse sections of the scientific world toward the general question of human evolution. Professor Morseili himself, while believing that theory and fact warrant us in seeing in the *Pithecanthropus erectus* "the extinct organic form most closely related to our own," recognizes that, since the remains are from the Pliocene, there would be hardly time enough for the transformation into the *Homo Neanderthalensis*. All difficulties are abolished, however, by not considering man as the direct descendant in the same genealogical line from the *Pithecanthropus*, but in making two collateral, scarcely divergent lines,—that of the *Pithecanthropus*, extinct in the Pliocene or Pleistocene, and that of *Homo* continued in the Quaternary human species and varieties. In this case there would be no transformed *Pithecanthropus*, and the immediate "progenitor" of man would remain to be discovered. The *Pithecanthropus* would be neither our father, nor our grandfather, but a far-off cousin and, paleontologically, a "precursor." His chief rôle is to show that the same phylum which procreated him was well able to originate contemporaneously, or, perhaps, a little before, or a little later, the *Prothomo*, or primitive man.

ALEXANDER F. CHAMBERLAIN.

North Queensland Ethnography: Bulletin No. 4. March, 1902. Games, Sports, and Amusements. By WALTER E. ROTH, B. A.; M. R. C. S., etc. The Northern Protector of Aborigines, Queensland. Brisbane: 1902.

This is a valuable and admirably illustrated collection of the games and amusements of the native Australians. The writer includes, under the general head of games, every sort of amusement from story-telling

(imaginative) to music (exultive). Of the sports described only a very small number would be classified as games in the ordinary acceptation of the term. Among such we find hide-and-seek (the lens of a fish-eye used in hiding), tug-of-war, catch ball, and top-spinning. "Bowl-ball" or "bowl-disc" consists in rolling a wooden ball or disc along a sloping cleared space and discharging small spears (*ichugari*) at it as it rolls,—corresponding with the Amerind game of *chunker*. Clay balls are spun like tops with the hands by men and women, two or three at a time, the one whose ball spins longest, winning. Other tops are made from gourds with a wooden spindle, and are twirled with the hands; and a buzz or whirlingig is fashioned from a similar gourd, with holes on opposite sides through which an endless string is passed.

Seventy-four illustrations of cats' cradles are given, the largest collection known to the reviewer. Some of the figures are extremely complicated, passing through many stages, the hands being supplemented by the mouth and knees; in some one or two, assistants are necessary, and two endless strings are used. Eight local names are given, one, *kapan*, signifying "cut" or "mark,"—the same term adopted for letters and writing when these were taught by the missionaries. Similar figures are met with at distances extremely remote, with and without the same interpretations. The latter refer to animals, plants, the sun, the moon, stars, clouds, lightning, rain, human actions, and utensils. They convey no suggestion of mythologic or religious significance. No games of chance are included, and Mr Roth says it is difficult for these blacks to understand the more civilized custom of producing emulation by a system of awards. With the exceptions noted, the amusements described are imitative and mimetic, and the writer refrains from suggesting any other explanation of their origin and significance. The system of classification, stated to be tentative, would be unsatisfactory for games generally.

STEWART CULIN.

Origin and Character of the British People. By NOTTIDGE CHARLES MACNAMARA. London: Smith, Elder, & Co., 1900. 242 pp., 33 figs., 8°.

This charming résumé escaped us when it appeared, and it now comes to our notice *in circuitu*. The *Archiv für Anthropologie* published a translation of Dr Macnamara's Hunterian address on "Prehistoric Man and his Relationship with the Present Population of Western Europe." The illustrations to this paper at once arrested our attention, being good photographic reproductions of the celebrated crania and jaws described in Mortillet's *Le Préhistorique*. Not remembering to have seen so many of them in one publication, we lost no time in hunting up

the author, who called attention to the work here reviewed, in which also the celebrated ancient crania are used as a basis for characterizing the ethnic ingredients in England, Wales, Ireland, and Scotland. The longheaded first man, the Iberian longheads, the Aryan longheads, and the Mongolian brachycephals are described and located. In England the only human inhabitants, until the Mid-neolithic people, were Iberians; then came the Celtic Aryans; following them in the north of England were the men of Turanian blood, and the short, dark, broadskulled Mongolians of central Europe.

This hasty review of all European history is with reference to the last two chapters, for the book has a serious purpose: chapter iv summarizes the racial origin of the British people, and chapter v discusses the development of the intellectual faculties, the physiological characteristics of the several progenitors of the British people, the qualities of each good for nation-building, and, finally, the influence of crowding into cities and other modern conditions on the somatic, mental, and moral characteristics of this ethnic compound.

It does not take long to find out that a work on the races of Europe in which Sergi's name does not appear is strongly pro-Teuton. Indeed, the author asserts that the "unity and integrity of the great Teutonic race, of which the Anglo-Saxon forms so important an offshoot, are of paramount interest, for upon this union the progress and the freedom of the human family depend." He pleads for unity among the whole Teutonic race, and adds pathetically: "If the inhabitants of the Transvaal and the Orange Free States had been thoroughly acquainted with the English language, they would never have been led by interested persons into the terrible conflict in which they are now engaged."

It would be easy to show that in this sympathetic work some of the terms and opinions are not in harmony with those of Ripley, Keane, Deniker, and Sergi, and, perhaps, of the reviewer. Dr Macnamara is not an Aryaphobiac; he thinks that the Eskimo are the descendants of European glacial man, of pure blood, and does not look to North Africa to supply all the ingredients of the British. But he is careful to give his authorities, and he moves right on. The style and bookmaking are beyond criticism.

O. T. MASON.

Les industries primitives. Défense des dolithes. Les actions naturelles possibles sont incapables à produire des effets semblables à la retouche intentionnelle. Par M. A. RUTOT. Bruxelles: Hayez, 1902. 68 pp., 5 figures.

In this pamphlet, reprinted from the *Bulletin de la Société d'Anthropologie de Bruxelles*, M. Rutot, Curator of the Musée Royale

d' Histoire Naturelle de Bruxelles, presents an elaborate argument against the origin, through natural causes, of the flints of the Kent chalk-plateau, Puy Courroy, Otta, Saint-Prest, Thenay, etc., the so-called "coliths," whose human manufacture is not admitted by anthropologists in general. The discussion now centers about "the flints of Thenay." After the investigation of "Tertiary man at Thenay," M. Boule, a representative French anthropologist, considered that the question was closed, since these "coliths" could not be looked upon as products of primitive human industry. The author takes up in succession the actions of changes of temperature, running water and torrents, sea-waves, settlement of strata, and such "accidental causes" as have been suggested by M. Capitan and others. These M. Rutot considers ineffective, and, expressing his willingness to let the case rest on "such flints only, however perfect they may be in their adaptation to certain uses, as bear evident traces of having served for those purposes," holds that only the workings of the hand of man can explain their shape and condition. In spite of the arguments of M. Rutot, who is a geologist and a careful student of the strata of the Belgian Quaternary and Tertiary, the majority of anthropologists are still prone to regard the "flints of Thenay" as untouched by man.

ALEXANDER F. CHAMBERLAIN.

The Oraibi Powamu Ceremony. By H. R. VOTH. (Field-Columbian Museum, Publication No. 61. Anthropological Series, vol. III, number 2. The Stanley McCormick Hopi Expedition.) Chicago: December, 1901. 97 pp., 37 plates, 8°.

It is a remarkable commentary on the extent of Hopi ceremonials that with the large body of observations on the subject already published, the field has only been scratched. The periodical ceremonies of no single pueblo have been described; beyond that is the comparative study, and the philosophy and interpretation of it all seem to challenge scientific effort. This adds to our respect for the conscientious work of Stephen, Fewkes, Voth, and Dorsey, whose self-denial has much extended our knowledge in this direction.

The present paper shows that admirable work is being done on the ceremonies of Oraibi by Mr Voth, and the *Powamu* is a good sequel to the *Soyal* paper, in which Mr Voth and Dr Dorsey cooperated. The *Powamu* ceremony takes place in February, and has for its purpose the symbolic protection of the fields from all destructive forces and to prepare them for the approaching planting season. The paper gives abundant evidence of the great care with which Mr Voth observed the ceremony in its minutest details. Few persons realize what privation

this means. It is fortunate that the author has recorded a large part of the numerous songs used in the ceremony and that he has been able to essay a translation of them. The illustrations are profuse and excellent.

There are numerous typographical errors, especially in the specific names of plants, but one can excuse minor blemishes in such a generally admirable work.

WALTER HOUGH.

Beiträge zur physischen Anthropologie der Nord-Nyassaländer. Anthropologische Ergebnisse der Nyassa- und Kingagebirge-Expedition der Hermann und Elise geb. Heckmann Wentzel-Stiftung. Mit Unterstützung der Stiftung herausgegeben von DR. FRIEDRICH FÜLLEBORN. Berlin: Dietrich Reimer, 1902. With text, 10 tables, 2 autotypes, 1 color scale, 63 photographic plates. Folio. (40 Marks.)

Students of African ethnology who have been delighted in reading Sir Harry Johnston's *British Central Africa* (1897) must follow up that comprehensive survey of a most interesting region by a close study of Doctor Fülleborn's tables and plates. The author lived three years in Nyassaland, in German East Africa, bringing together anthropological materials, making measurements, and taking photos. He must have had magical influence as a physician, for the natives are in his album singly and in companies, showing front, side view, and back. Dr Fülleborn has appreciated to the fullest extent the fact that the fixing of the tribe, the correct measures, and carefully taken photos are of more use to ethnology than any long story he could tell. The reader will put himself in touch with the book by consulting Stanford's *Compendium for Africa*, Vol. II, 1895, pp. 434 and 519. He will at the same time have occasion to mourn over the synonymy of tribes which may be looked for under *A* or *Wa*, or the initial letter, as Awamanganya, Wamanganya, or Manganya. The identification of the individual with the tribe and locality is so carefully done by the author, however, that the confusion in titles is reduced to its lowest terms. The name of the individual is given and the tribe of father and mother. Twenty-three measures of each person are then recorded, and remarks added concerning the color of eyes, hair, and skin, and also regarding other somatic characters not amenable to measurement. Plates 61-64 are devoted to footprints, and in tables viii-x the author discusses their merits by means of a series of measures upon the tracks and upon the feet themselves. In his capacity of physician Dr Fülleborn studied both the prevailing diseases among the Nyassa tribes and the recuperative powers in the case of wounds or maladies.

The sumptuous work is volume VIII of the German East African

series. The text and tables fill thirty pages of printed matter. Each of the 63 plates contains from three to many individuals, so that it is difficult to find where the author has neglected or omitted aught.

O. T. MASON.

The Decorative Art of the Amur Tribes. By BERTHOLD LAUFER. (Publications of the Jesup North Pacific Expedition: Memoirs of the American Museum of Natural History, vol. VII, number 1.) New York: 1902. 86 pp., 33 plates, 24 figures, 4⁵.

This monograph, like all the memoirs of the Jesup North Pacific Expedition, consists of the presentation of entirely new material. Sumptuously illustrated with 250 drawings, it deals with the decorative art, which is practically all the art, of the Gold, Gilyak, Orochon, and other tribes of the Amur region, including the Ainu. More articles of the Gold are described than all the other tribes together. Various arts are represented—carving in relief, ornamental painting, cutting of patterns in birch-bark and paper, and especially embroidering. A great variety of decorated objects are treated of, such as eye-protectors, mittens, spears, baskets, coats, and spoons.

Dr Laufer finds that there has been a strong Chinese influence on the art of the Amur country. Nothing, however, is actually known as to the history of the art-relations of the two regions. Dr Laufer's attitude on this matter is very conservative. He concludes that the art of the Amur tribes is old and deeply rooted, though its basis undeniably rests in China. He holds that the art is not an importation *en masse* from China, but must have had for its *conditio sine qua non* a congeniality in the minds of the two peoples; and that probably Chinese art was gradually absorbed and assimilated by the Amur tribes much as classic art was by the Europeans of the Renaissance.

The bulk of the book consists of a reproduction in illustrations of a large number of specimens of this art, and of an analysis in the text of the ornamental forms so shown. This analysis is carried out with great detail and much accuracy; it is so undeniably thorough as to make tedious reading to any one not specifically interested in problems of ornamentation. This care and thoroughness of analysis, however, give the book its value, for in the interpretation of decorative forms, superficial fancy has such an appalling opportunity that it is the great danger of study of this kind, and the condemning fault of much that has been published. Dr Laufer's analysis, in addition to being marked by caution and good sense, has the inestimable advantage of being founded on that of the natives.

The art of the Amur tribes is essentially ornamental. Its character is, to use the author's expression, formative, not realistic. Chinese art is largely emblematic or symbolic, but of this quality little has been adopted by the Gold. Chinese symbolic patterns are imitated without their symbolism being known. The decorative nature of the art is shown most decisively by the very extensive use of the cock, an animal that plays no part whatever in the mythology or daily life of any of the tribes of the region, and which by some of them has never even been seen; their knowledge of it, and their use of it in art, are due to Chinese influence.

The variety of degrees of conventionalization with which the cock and the fish, the two most important objects of representation in Amur art, are employed, and the way in which these decorative motives are used and abused and adapted to the purposes of decorative art expression, are shown very fully and convincingly in the course of the volume. The difference between the several conventionalizations of the same animal occurring on one object is sometimes very remarkable, and must be set down as one of the salient characteristics of the art. Such fully graduated series of cocks and fishes, as are illustrated, for instance, in figure 1 of plate xxx,—from those that are simply but quite effectively realistic, through others which the author's careful analysis and feeling for the spirit of the art make visible, to those forms, finally, where even his explanations end in a declaration of *non possumus*—are very unusual in primitive art. The cause for these various degrees of conventionalization the author does not find to be a gradual and progressive crystallization of originally realistic non-decorative designs. An influence of technique or material seems out of the question because the different conventionalizations are sometimes found together on the same object; and the author does not even consider this possibility. He wisely attributes this variety of degrees of conventionalization to the creative decorative spirit, or, as he calls it, the "inward impulse to create new [ornamental] forms."

His explanation of the Amur preference for the cock and the fish as decorative motives is at bottom the same: the cock and the fish are peculiarly available and adaptable ornamentally. "These particular animals have an extremely ornamental character because of the great permutations of their graceful motions, and thus lend themselves admirably to the spirit which strives after beauty of form." ("Form," here as elsewhere in the volume, is to be taken as equivalent to "decorative form.")

This explanation, however, does not seem to be sufficient. Another causal factor is required: the nature and spirit of Chinese and

Amur art. The cock and the fish unquestionably were extremely available to this art; but it is too much to say absolutely that their availability is the cause of their prominence in it, for they were, *per se*, equally available to European decorative art, which did not take them up and use them to any extent. An analogous case is the fleur-de-lys. Finding its origin (partial if not ultimate) in heraldic symbolism, its wide ornamental employment in European civilization today is due not so much to any significance as to inherent ornamental availability; but to allege this as the sole cause of its use would be obviously insufficient, for were the character of European art other than it happens to be, the fleur-de-lys would not have been so adaptable and available an ornament. The triskeles and the rosette both have great ornamental possibilities, yet the art of one culture uses only one of them and the art of another only the other to any considerable extent.

A point of general bearing that is brought out in the conclusion, is the essential and necessary connection between conventionalized ornamentation on the one hand, and the forms of nature on the other. A fish "would never have been drawn in spiral form, would never have clung to a spiral, without a foundation of fact." This clinging of the most purely decorative ("formal") arts to a certain amount of realism, is an unexplained and perhaps unexplainable fact, but one that occurs the world over and should never be forgotten in the study of ornamentation.

Two faults of omission can be found with the paper. The internal geographical relations of the art are nowhere made clear, and it is not even stated, except incidentally and incompletely, whether, and to what extent, the technique of the various tribes differs. Another point on which more clearness would have been desirable is as to the precise degree to which the explanations of ornaments that are given belong respectively to the author and to the natives.

Altogether Dr Laufer's volume is a valuable contribution both to the ethnography of the Amur region and to the general study of ornamentation.

A. L. KROEBER.

PERIODICAL LITERATURE

CONDUCTED BY DR ALEXANDER F. CHAMBERLAIN

GENERAL.

Anthropology at the Glasgow (Sept. 11-13, 1901) meeting of the British Association for the Advancement of Science. (Man, London, 1901, 156-160.) Brief abstracts of papers and discussions.

Azoulay (L.) Photographie d'un cas d'hémimélie. (Bull. et Mém. Soc. d'Anthr. de Paris, 1902, v^e s., III, 51.) Brief account of a case of hemimely taken by "snap-shot."

— Quelques déformations consonantiques chez un enfant apprenant l'anglais. (Ibid., 52-54.) Brief account of the sudden softening of certain consonants (*f* before the participial *-ed*), and adding *d* after terminal *-ss*, in the speech of a French girl of 9 years who had been learning English for some time,—the peculiarity lasted only a month.

Bastian (A.) Zur noëtischen oder ethnischen Psychologie. (Ethnol. Notizbl., Berlin, 1901, II, 34-50.)

— Die Berührungspunkte der physischen Psychologie mit der noëtischen, auf dem Bereiche der Ethnologie. (Ibid., III, 140-161.)

— Zur ethnischen Psychologie. (Ibid., 162-173.) In these three essays Dr Bastian discusses *more* *the* numerous topics connected with "ethnic psychology," the "elemental thoughts," in particular. For those interested in the problems of individual and racial psychology there is much to be gleaned from these pages.

Bloch (A.) *Œuvres ataviques de la transformation des races.* (Bull. et Mém. Soc. d'Anthr. de Paris, 1901, v^e s., II, 618-624.) Treats of "pigment spots," spots on the conjunctiva, lip-coloration, "the white line of the abdomen," coloration of external genital organs, etc., in the Japanese (Haele) and other yellow peoples, with brief reference to

atavisms in the white races (change in course of few months of infants with brownish skin and dark hair to white skin and blond hair,—a phenomenon noted in the department of Vienne; dark coloration of the free edge of the eyelids in certain Arabs). The "pigment spot" is, according to Dr Bloch, "a sort of rudimentary organ, an atavistic stigma." The majority of races whose children have the "blue spots," are descended, he thinks, from "the Negritos, the oldest race of the Far East."

— De quelques travaux récents qui intéressent l'anthropologie. (Ibid., 636-640.) Extracts from recent contributions to the proceedings of the Société de Biologie, with comments. The works noticed are Weiss "On the functional adaptation of the digestive organs," Gilbert and Herscher "On the diminution of the coloration of blood serum," Also Carmichael and Mandou's "Blue and green colorations of the skin of vertebrates," and Floresco's "Relation between the liver, the skin, and the hairs from the point of view of pigments and iron," papers presented to the Académie des Sciences.

Bolton (H. C.) The vintner's bush. (J. Amer. Folk-Lore, Boston, 1902, XV, 40-44.) Traces, with references to literature, this tavern-sign from the first century A.C. to the present day. The bush of the taverner, like the three balls of the pawnbroker, the barber-surgeon's poles and basins, etc., was a trade-emblem taking the place of the alphabetical sign-board in times before the existence of popular education.

Bourneville (Dr) et Paul-Boncour (G.) *Considérations sur la morphologie crânienne dans ses rapports avec les états pathologiques du cerveau.* (Bull. et Mém. Soc. d'Anthr. de Paris, 1902, v^e s., III, 35-49.) Treats, with 4 text-figures, of trigonocephaly, acrocephaly, hypertrophy of the frontal, atrophy of the frontal lobes in two cases of idiocy.

Calhoun (A. R.) Jacques de Morgan, (Rec. of Past, Washington, 1902, 2, 156-159.) Brief biography (with picture) of the French Orientalist, since 1886 at work in western Asia.

Chamberlain (A. F.) Work and rest; Genius and stupidity. (Pop. Sci. Mo., N. Y., 1892, LX, 417-423.) From consideration of the life of animals, the child, woman, genius, criminal, savage, and the race in general, the author seeks to establish the theory that brief periods of work at the highest possible tension alternating with longer periods of rest or changed activity represent the best working conditions; that this is the normal phenomenon of work in so far as it is best and most genially productive and profitable racially and individually.

Delisle (F.) Les macrocéphales. (Bull. et Mém. Soc. d'Anth. de Paris, 1902, 5^e s., III, 26-35.) After citing in translation the text of Hippocrates concerning the macrocephali of the Euxine, the author inquires into their disappearance historically and insists upon the importance of the discovery of graves with macrocephalic skulls in central and western Europe.

Dewey (J.) The interpretation of savage mind. (Psych. Rev., N. Y., 1902, IX, 217-230.) According to the author, "the psychical attitudes and traits of the savage are more than stages through which mind has passed, leaving them behind; they are outgrowths which have entered decisively into further evolution, and as such form an integral part of the framework of present mental organization." Dr. Dewey then proceeds to discuss the "hunting psychosis," pre-hunting, hunting, and post-hunting situations, etc. No purely hunting race has been dull, apathetic, stupid. Their art is dramatic and mimetic. All expressions of life are filled with the *motif* of the combat or hunting situation. The "hunting structural arrangement of mind" has not been destroyed or left behind, rather its constitutive psycho-physic factors have been set free, "so as to make them available and interesting in all kinds of objective and idealized pursuits,—the hunt for truth, beauty, virtue, wealth and social well-being, and even of heaven and of God."

Ferri (E.) Le cinquième congrès internationale d'anthropologie criminelle. (Rev. Scientif., Paris, 1902, 4^e s., XVII, 331-335.) Résumés proceedings of the International Congress of Criminal Anthropology, held at Amsterdam, Sept. 9-14, 1902, with brief account of previous Congresses. Perhaps the most remarkable paper read was that of Sutherland on the results of the deportation of criminals to Australia,—though originally peopled in large part by criminals, Australia has now a low criminality. This is a good example of the *syndromes of crime*.

Glénard (F.) Le vêtement féminin et l'hygiène. (Ibid., 388-394, 425-434.) A plea for the corset on esthetic, hygienic, and medical grounds. The corset brings out the "undulating lines of woman's body." Corsets to guard the health and not injure the esthetic outlines can be made and used without harm. The essay is illustrated with 16 text-figures.

Haddon (A. C.) Totemism: Notes on two letters published in the *Times* of September 3d and 7th, 1901. (Man, London, 1901, 149-151.) Protests against the description by Hon. A. Herbert of certain stones found in the gravel beds of the Avon valley in South Hampshire, claimed by him to be artificially worked in the forms of moons, reptiles, animals, mountains, parts of the body, etc., as "a new volume of *Totemism* suddenly placed in our hands." Professor Haddon justly refuses to speak of every animal cult as "totemism," and concludes that "whatever the stones may be, they can never be proved to be totems or representations of totems." He suggests that the term *totemism* might be "restricted to practices and beliefs which are undoubtedly similar to those of the Ojibwa cult." (See book review herein, p. 323.)

Jakel (V.) Die Beziehung des linken Hand zum weiblichen Geschlecht und zur Magie. (Int. Chl. f. Anth., Stuttgart, 1902, VII, 1-6.) Discusses the relation of the left hand to the female sex and to magic, with references to literature. Evidence in point is adduced from the ancient Egyptians, African negroes, peoples of Siberia, gnastics, Semites, Basques, Polynesians, Teutons, etc. The idea of the left

Jäkel—Continued.

hand as a female symbol is widespread. Equally current seems to be the relation of the left hand to magic,—it is the "magic hand." The correlation with darkness, ill-luck, etc., is more common than that with sanctity.

Keasbey (L. M.) The differentiation of the human species. (Pop. Sci. Mo., N. Y., 1902, LX, 445-457.) Of the single human species the author considers that there is a fourfold ethnic division corresponding to geographical areas more or less defined. These are: Negro, product of tropical forests; Mongolians, of temperate plains; whites, a derived race (Negro-Mongolian), otherwise the result of their peculiar surroundings; American Indians, derived partly from Arctic Europe and (more) from Arctic Asia, and developed in the environment of the New World *cultures*. The species in general "was differentiated from the other anthropoids within Indo-Malaysia, where the climate was moist and warm and the surface of the ground covered with a tropical forest growth." Dr. Keasbey thinks that "it is natural, therefore, that the blacks should conserve the conspicuous characters of the ape-like ancestor and resemble the human prototype more closely than any other people."

Kobel (O.) Ethnographische Voraussetzungen der Welt-Pädagogik. (Ztschr. f. Philos. u. Pädag., Langensalza, 1902, IX, 34-43.) The author holds that "every people is largely a product of its country." Religious peoples like the Hebrews give their education a religious cast. The Italians are artistic, the English prosaic. Poor people can have but a brief school-life. Thinly peopled countries have not a many-branched system like that of densely populated lands. Agricultural countries develop the public country school. Trade fashions come school systems. International centers or depots have their systems modified by the existence of international intercourse. This paper is hardly what its title would lead one to expect.

Lasch (R.) Ueber Vehmehungstendenz bei den Naturvölkern und ihre Gegenwirkungen. (Ztschr. f. Sozialw., Berlin, 1902, V, 82-95, 162-166, 345-352.) A general discussion, with bibliographical references, of the "tendency

to increase beyond the means of subsistence" among primitive peoples. The Australians, Eskimos and other Hyperboreans; Amerinds of both continents, the lower agricultural tribes (New Guineans, and other Papuans and Melanesians, Polynesians, Malays, African peoples), etc., are considered. The chief conclusions arrived at are: (1) Among primitive peoples the population does not tend to increase beyond the means of subsistence. (2) The absence of this "tendency" is due to the fact that the potential augmentability is reduced by physiological and biological factors and adapted to the sphere of subsistence. (3) Artificial means of restraint in use lead to a misrelation between population and means of subsistence, the last increasing over the first.

Mac Ritchie (D.) Hints of evolution in tradition. (Rep. Brit. Assoc., Lond., 1901, LXXI, 806-807.) The author considers that "the various European nations still retain a confused memory of intercourse with races that were anthropoid rather than human." The proofs of it lie in the character of the "half-men" of Welsh tradition, the trolls and rises of Scandinavia (also "half-trolls," etc.), the *fenodyres* and *glashyns* of Manx folklore, the elves, fairies, brownies, goblins, and the like of the British isles, the *Kobold* of Germany, and the "dwarfs," "giants" of many lands, who so often possess anthropoid physical qualities and infra-human intelligence. This paper has been amplified and printed in pamphlet form (10 pp.).

Myres (J. L.) Note on the use of the words "glaze" and "varnish" in the description of painted pottery. (Man, London, 1901, 98-99.) Author advises confining use of term *glaze* to vitreous, and *varnish* to gummy and resinous pigments. Discusses also the *idip* of Cyprian vases, *immar*, *stahn*, etc.

Newell (W. W.) Fairy lore and primitive religion. (Intern. Mo., Burlington, Vt., 1902, V, 316-337.) Discusses "the illuminating history" contained in *fairy, fay, faki*, etc. Treats of the "fating" of the child, christening, birth-ceremonies, name-day, fays at nurses, fays at birth and death, fates, fairies as dwarfs, destinies (female), swan-maidens, etc., animals. Among

Newell—Continued.

the conclusions arrived at are: The fundamental ideality of spirits of every sort. Modern man's fancy is restrained by the voice of understanding. The fays correspond to the innumerable Roman genii. Many are the survival of ancient divine powers. The ends of early religion were practical.

— The legend of the holy grail. VII. (J. Amer. Folk-Lore, Boston, 1902, xv, 34-55.) Brief notes on the grail and Glastonbury, recent literature, etc.

Peet (S. D.) Stone circles in Europe and America. (Amer. Antiq., Chicago, 1901, XXIII, 371-378.) General illustrated discussion. Treas of Stonehenge, Avebury, Portsmouth (Ohio), etc.

— The common things of the pre-historic age. (Ibid., 395-410.) Treats, with 9 text-figures, of boats, roads, bridges, and canals, in ancient America chiefly.

Piette (E.) Les causes des grandes extensions glaciaires. (Bull. et Mém. Soc. d'Anth. de Paris, 1902, v^e s., III, 88-96.) The author agrees with de Lapparent in finding the reason of the great glacial extensions in the depression of the large extent of land formerly aniling Europe and North America, — a cause local to the North Atlantic region. Mr Piette also discusses the nomenclature of the prehistoric periods, explains certain terms which he proposes to adopt, and delimits others.

Rapport sur le concours du prix Bertillon, 1901. (Ibid., v^e s., II, 666-705.) Critical résumés of works submitted for the Bertillon prize: Cauderlier's *Les lois de la population et leur application à la Belgique*, by G. Hervé (pages 665-684); Macquart's *La diminution du taux de la natalité, la "dépopulation française" et les lois de la population*, by G. Hervé (685-693); Ripley's *The Races of Europe* by Y. Guyot (694-705). The prize was divided *ex æquo* between Messrs Cauderlier and Ripley, and M. Macquart received very honorable mention with a medal.

Rapport sur le concours du prix Godard, 1901. (Ibid., 705-708.) The works entered for the Godard prize were Faivre's *Étude médico-légale et sociale*

sigue de la criminalité. Titchener's *Experimental Psychology*, Volkov's *Variations squelettiques du pied chez les primates et les races humaines*. The prize was awarded to the last, of which a critical résumé by M. Anthony is given. Dr Titchener was decreed a medal.

Regnault (F.) Rôle des muscles dans la morphogénie osseuse. (Ibid., 612-618.) After discussing the views of Papillault that the hollowing of bones by muscles is due to the struggle between the muscular and osseous tissues in which the latter has the worst of it, the author treats of the mechanism of osseous projections and depressions. M. Regnault holds that the osseous modifications are due to permanent action of muscles and not to temporary contractions or tensions produced in movements.

Risley (H. H.) On an improved method of measuring the vertical proportions of the head. (Man, London, 1901, 161-183.) Describes, with text-figure, apparatus now in use in the anthropometric work of the census of India. A T-square is used in combination with the height-measure, to which are affixed a clamp and a horizontal bar.

Russell (F.) Know, then, thyself. (J. Am. Folk-Lore, Boston, 1902, xv, 1-13.) Address of President of American Folk-Lore Society, 1902. Argues for the cultivation of anthropological science, as a sense-trainer, thought-stimulator, ameliorator of racial prejudices, checker of ultra-self-complacency, corrective of undue specialization, etc. Its value for the student of religion, the diplomat, the law-maker, and the jurist is shown. The argument is illustrated by incidents from the writer's own experience. Old Peter, his Assiniboine guide, taught him, Dr Russell asserts, "as much about observing as any college professor."

Schmeltz (J. D. E.) Verslag over een bezoek aan de Wereldtentoonstelling te Parijs in October en November 1900. (Rijks Ethn. Mus. te Leiden, 1901, 46-53.) Brief account of visit to Paris Exposition of 1900, with comments on the exhibits from various countries.

Schoetensack (O.) Ueber die Bedeutung der "Hocker" — Bestätigung. (Verh. d. Berl. Ges. f. Anthr., 1901,

Schoetensack—*Continued.*

522-527.) The author considers that the neolithic people of Europe, certain Australian tribes and others, who buried their dead in the knee-elbow position, were led so to do by the fear of their return and their desire to prevent it by hampering the corpse in possible movements. Other related customs are referred to. The skeleton of Ramefello, figured in the text, shows the "Hocker" burial in exaggerated form.

Steinmetz (S. R.) *Der erbliche Rassen und Volkscharakter* (Vierteljahrs f. Wiss. Philos., Leipzig, 1902, XXVI, 77-126.) Interesting and valuable discussion of the hereditary characters of races and peoples, with critiques of the chief recent literature and abundant bibliographical references. The works of Lapouge and Houston Chamberlain are given special attention. The topics treated are: The theoretical and practical significance and pressing nature of the problem. Its right comprehension. The possibility of hereditary race-characters. The biological-psychological aspect. The intellectual *Anlage* of primitive peoples. The race-characters of Semites and Teutons. *Homo Europæus* vs. *Homo Alpinus*. Characters of peoples within the same race. In the matter of "racial heredity," the author thinks, more research and less dogmatism is necessary. The Teutons are now the "strenuous," energetic race of the world, yet, according to Tacitus, they gambled, drank, and idled, or fought and hunted. Houston Chamberlain's and Lapouge's estimates of Semitic character cancel each other. The uncivilized (unprogressive) peoples of Aryan stock in Asia cannot be left out of account. Dr Steinmetz holds that no original differences exist between the European and the so-called "lower races." Favorable variations and selections, environments, etc., have given the former more eugenic individuals, families, groups, than the latter possess. Lapouge's "servility of the brachycephalic peoples" and Horatio Hale's idea that a "Basque" element inculcated a love of freedom into the Aryans are wide apart. The contrast of the *Homo Europæus* and the *Homo Alpinus* has been exaggerated. The essential difference between race (*Rasse*) and people (*Volk*) is that the latter have been for only a short time, relatively (as modern America) under

the influence of the differentiating factors. The attempts to fixate unique characters of race have failed.

Stratz (C. H.) *Ueber die Anwendung des von G. Fritsch veröffentlichten Messungs-Schema in der Anthropologie.* (Verh. d. Berl. Ges. f. Anthr., 1902, 36-38.) The author considers the Fritsch canon valuable for race discrimination, but not to be made exclusive. A series of 500 measurements indicates that the canon holds for normal individuals of the Mediterranean race,—the Nigritians are over, the Mongols under long in the extremities. In the discussion Dr Fritsch considered briefly Stratz's protomorph, archimorph, and metamorph races. Both Drs Stratz and Fritsch disagree with von Luschan's theory as to "mixed" races.

Strauch (C.) *Abnorme Behaarung beim Weibe.* (Ibid., 534-537.) Describes, with figure in text, a case of abnormal hairiness (about the teats and on the abdomen) in a woman, with reference to like phenomena in both sexes. Hairiness of the teats is rare in women. The subject in question was somatically somewhat masculine and committed suicide by throttling herself, the first case of the sort in Berlin for 17 years.

Super (C. W.) *Ethical progress through experience.* (Amer. Antiq., Chicago, 1901, XXIII, 384-393.) General argument from "the facts of history" to the conclusion that "progress to be continuous and uninterrupted must be based on the ethical principles, on the recognition of the rights of man, not of a class, and on a willingness to profit by the experience of the race." Experience in its widest extent is the postulate for development.

Symington (J.) *On the temporary fissures of the human cerebral hemispheres, with observations on the development of the hippocampal fissure and hippocampal formation.* (Man, London, 1901, 151.) Brief abstract of paper concerned with Hochstetter's recent views. The rudimentary gray and white matter existing on the dorsal aspect on the adult human *corpus callosum* is held to be "the remains of a hippocampal formation."

Thomas (N. W.) *Suggestions for an international bibliography of anthropology.* (Man, London, 1901, 129-

Thomas—Continued.

133.) General outline of scheme, with example of titles. Mr Thomas thinks that "the scheme propounded by Dr Brinton will probably be found in practice to have the balance of convenience on its side."

Verneau (V.) Discours du Président pour 1902. (Bull. et Mém. Soc. d'Anthr. de Paris, 1902, 3^e s., III, 13-20.) Contains an account of the status of anthropology in the various European Universities.

— Discours aux obsèques de Mme Clémence Royer. (Ibid., 75-78.) Sketch of life and works of Mme Clémence Royer, honorary member of the Society since 1887.

Wake (C. S.) Language as a test of race. (Amer. Antiq., Chicago, 1901, XXIII, 379-384.) Résumé and criticism of Horatio Hale's article on this subject in the *Transactions of the Royal Society of Canada for 1891*. Mr Wake holds that "so far from language being the true basis of anthropology, it is not even a sure test of the affinities of race."

EUROPE

Almgren (O.) Nyare undersökningar af Danmarks "kjöckenmöddingar." (Vmer. Stockholm, 1902, XXII, 56-64.) Résumé of recent investigations of the kitchen-middens of Denmark, based upon *Affaldsbygger fra Stenålderen i Danmark undersøgt for Nationalmuseet* (Kjøbenhavn, 1900), embodying the results of investigations by Madsen, Møller, Neergaard, Petersen, Kostrup, Steenstrup, and Winge, carried on in 1893-1898. Of the 8 shell-heaps examined 5 belong to the older and 3 to the later Stone age. Botanical, zoological, archeological data are briefly referred to. The oak is the most commonly represented in the charred remains. Of the hunting fauna 10 species are now extinct in Denmark.

Andersson (G.) En stenålders-boplatz på Hven. (Ibid., 96-98.) Brief description of a "station" of the Stone age on the island of Hven, investigated in 1899. The fragments of flint and pottery found indicate the first part of the later Stone age.

Baudouin (M.) La photographie stéréoscopique des mégalithes. (Bull. et Mém. Soc. d'Anthr. de Paris, 1901, 3^e s., II, 502-503.) Treatise, with 4 text-figures, of the advantages of stereoscopic photography of megalithic monuments, etc., and the *modus operandi* by which the views of various megaliths were obtained.

Bosanquet (R. C.) Report on excavations at Prasos in eastern Crete. (Man, London, 1901, 187-189.) Account of excavations in the spring of 1901. Prasos, the ancient capital of the aboriginal Eteocretans, is barren of Mycenaean remains, though such occur close to the city.

Boule (M.) Les gravures et peintures sur les parois des cavernes. (L'Anthropologie, Paris, 1901, XII, 671-677.) Résumés, with 7 text-figures, the discoveries of Capitan and Breuil, Rivière, etc., of pictographs of the paleolithic period in the caves of La Vache, Combarelles, etc. See *American Anthropologist*, 1902, IV, 330.

Brunšmid (J.) Arheološke bilješke iz Dalmacije i Panonije. IV. (Vjesnik Hrvat. Arheol. Društva, Zagreb, 1901, X, 3, v, 87-168.) The fourth section, with 72 text-figures, of "Archeological Notes on Dalmatia and Pannonia." Roman inscriptions, remains of buildings, vessels of stone, bronze, clay, etc., tile-stamps, clay-lamps, celts, statues, glass objects, mirrors, fibulae, rings of silver, needles, iron objects, plates of bronze, altars, monuments, rock-sculptures, etc., are described. Among the more interesting objects are a portrait-head of Augustus, the *piscini domini* ("inscribed stone") and the rock-reliefs with Mithraic subjects, the rock-altar to Jupiter at Vital, etc.

— Groblje bronzanoga doba na Klačenic kod Jablanca (kotar Senj). Prvi jest inješta Jablanca. (Ibid., 53-62.) Brief account of the Bronze-age cemetery on the Klačenica, near Jablanica, with sketch of the history of Jablanica. The neolithic "station" of Jablanica is of considerable importance. See *American Anthropologist*, 1902, IV, 330. The paper is illustrated with 1 plate (figuring fibulae, etc.,) and 1 text-figure.

Branišćid—Continued.

— *Predmeti halštarskoga doba iz grobova u Vranika gomili u Sirokoj Kuli.* (Ibid., 65-72.) Describes, with 2 plates and 2 text-figures, objects of the Hallstatt period (fibulae and other ornaments chiefly) from graves in Siroka Kula, district of Gospić.

— *Hrvatske razvaline.* (Ibid., 44-52.) Treats, with 5 text-figures, of three ruined churches in the Croatian districts of Otočac and Gospić, and of ornaments from the old Croatian cemetery of St Mark at Otočac.

— *Nekoliko našaša novaca u Hrvatskoj i Slavoniji.* XII-XV. (Ibid., 235-243.) Brief account of finds of coins of the third century in Croatia and Slavonia. Continued from previous numbers.

— *Nov sčimak grčkoga napisa iz Lumbarda na otoku Korčuli.* (Ibid., 19-20.) Treats, with 1 text-figure, of a new fragment of the Greek inscription from Lumbarda, in the island of Curzola.

— *Stari utezi u narodnom muzeju u Zagrebu.* (Ibid., 244-245.) Brief account, with 2 text-figures, of ancient bronze weights from Mitrovića and Salva in the Agram Museum.

— *I Jevremović (L.). Stari napisi iz okoline Polareva u Srbiji.* (Ibid., 1-18.) Treats of Roman inscriptions in the neighborhood of Polarevan, Servia.

Bryce (T. H.) Prehistoric man in the island of Arran. (Rep. Brit. Assoc., Lond., 1901, LXXI, 795-797.) Gives list of cairns and contents. Brief notes on stone and bronze implements, ornaments, pottery, human bones (crania are dolichocephalic). The culture is neolithic.

Celestin (V.) Rimski svjetiljke iz Osijeka. (Ibid., 21-25.) Treats, with 20 text-figures, of Roman lamps of clay and bronze from Essek, the inscriptions, markings, etc.

Coffey (G.) Irish copper celts. (J. Anthr. Inst., Lond., 1901, XXXI, 265-279.) Treats, with 14 plates, of the chemical composition, types, distribution, etc., of copper celts in Ireland. The author concludes that these objects "represent a period in which copper was in general use throughout Ireland,

before bronze was known." In the discussion, Mr Balfour also expressed his "belief in the existence of a definite Copper age in Europe, bridging over the gap separating the Neolithic and the Bronze ages." Copper celts appear to be very rare in England. The oldest forms of copper celts "closely resemble the stone celt forms found in Ireland." The copper celts are without ornamentation, nor is there any trace of a stop-ridge. The analyses made "agree substantially among themselves and with those of copper celts from other parts of Europe." The small percentage of tin found came probably with the copper.

Courty (G.) Petits grès-tallés en biseau. (Bull. et Mém. Soc. d'Anthr. de Paris, 1901, v^e s. II, 716.) Brief account, with text-figure, of bevel-shaped fragments of sandstone (probably used to mark rocks, etc.), from Fontainebleau near the "station" of Lardy (Orleans). The author thinks they were used by primitive man.

— *Sur un gros coup de poing chelléen.* (Ibid., 1902, v^e s. III, 50-51.) Brief note, with text-figure, of a remarkably large Chelléan "coup de poing" from the department of Seine-et-Oise.

Cunningham (J. H.) Excavations at Ardoch. (Rep. Brit. Assoc., London, 1901, LXXI, 790-791.) Notes of investigations at the Roman station of Ardoch, Perthshire.

De Cock (A.) Spreekwoorden en zegswijzen, afkomstig van oude gebruiken. (Volkskunde. Gent, 1901-1902, XIV, 19-24, 71-78, 102-108, 140-157, 190-198.) Nos. 302-437 of proverbs and sayings originating in old customs. The subjects concerned here are the weaving trade, professions, etc. Explanatory notes and bibliographical references are given for each item. The terms *bastard*, *bankaard*, *Bankkind*, *enfant de la halle* = "illegitimate child" are worth noting (p. 193). The teacher is satirized in the proverb "a hundred teachers, ninety-nine fools" (p. 106). In pages 76-77 are given several references to "drinking tobacco."

— *Het liedje van de drie tamboers.* (Ibid., 31-35, 78.) Two versions (with music) of the song of the "Three Drummers." This Flemish folksong ap-

De Cock—*Continued.*

pears in a military songbook issued to the army in 1901. It is almost identical with the Breton folksong "Les trois tambours."

Taalvervorming in den kindermund. (Ibid., 89-100.) Treats of the transformations and deformations of words and phrases in the rhymes and verses used by Flemish children. Many interesting examples are given. The subject has been discussed with more detail in A. De Cock and I. Teelback's forthcoming work *Kinderspel en Kinderlied in Zuid-Nederland*, which was crowned by the Royal Flemish Academy in 1901.

Allerheiligen — Allerzielen. (Ibid., 133-143, 173-181.) General discussion, with numerous bibliographical references, of the festival of "All Saints," "All Souls," and its cognates past and present. Among other things "angel cakes," "soul cakes," the "soul wagon," etc., are referred to.

Het liedje van den uil. (Ibid., 158-161.) Two new versions (with music) of the Flemish folksong, "The owl that sat on the pear-tree sat."

Sagen betreffende de stalkaars. (Ibid., 161-162.) Three brief Flemish legends about the will-o'-the-wisp.

Evans (A. J.) The neolithic settlement at Knossos and its place in the history of early Aegean culture. (Man, London, 1901, 184-186.) Brief account, with 14 text-figures, of an early and very extensive neolithic settlement on the hill of Kephala, where an abundance of pottery, stone implements (including over 300 celts), and many small human images of clay and marble (prototypes of subsequent Metal-age stone images), etc., were found. These images, Dr Evans thinks, were ultimately derived "through intermediate types, from clay figures of a Babylonian mother-goddess." This neolithic settlement was the first of the kind explored in the Greek world, and is consequently of great interest. The lowest limits of the settlement cannot be later than 3000 B.C., the higher limit is very much more remote. See also *Rep. Brit. Assoc.*, Lond., 1901, LXII, 703-703.

"The oldest civilization of Greece." (Ibid., 173-175.) Criticism of the position of Mr H. R. Hall, au-

thor of the *Oldest Civilization in Greece*, and of a reviewer of the work in a previous number of *Man*. Mr Evans holds that he has "stripped the last rags of the theory that brought down Mycenaean civilization in Cyprus to the eighth or even the seventh century, B.C."

Fouju (G.) Fouilles au dolmen de Menouville. (Bull. et Mém. Soc. d'Anth. de Paris, 1902, 5^e s., III, 54-57.) Account of investigations at the covered-passage dolmen of Menouville in 1901. A number of fragments of human skulls and other bones were discovered, some flints, etc. See Menouvrier (L.).

Instruments paléolithiques et néolithiques en roche meulière. (Ibid., 62-63.) Brief note on a "coup de poing" from Marais, and some millstone axes from Seine-et-Oise, etc.

Fourdrignier (E.) Rapport sur le Congrès de Tongres. (Ibid., 5^e s., II, 713-716.) Résumés the proceedings of the Congress of the Archeological and Historical Federation of Belgium held at Tongres, in August, 1901. About Tongres pre-Roman and Roman antiquities abound,—it was the country of the Aduatuci and Eboraci, redoubtable adversaries of Caesar.

Galton (F.) The possible improvement of the human breed under the existing conditions of law and sentiment. (Man, London, 1901, 161-164.) Abstract of Huxley Memorial Lecture with "standard scheme of descent." See *American Anthropologist*, 1902, 8, 3, IV, 310.

Giraux (L.) Pointes de flèche de Corse, Corse. (Bull. et Mém. Soc. d'Anth. de Paris, 1902, 5^e s., III, 80-82.) Brief description of a series of 73 arrow-heads of all possible forms from Corsica. The specimens are of jasper, flint, and obsidian, the last imported from Sardinia (?).

Hervé (G.) Crâne macrocéphale de Saint-Fres et photographies des sépultures préhistoriques de Chamblaudes. (Ibid., 1901, 5^e s., II, 233-237.) Brief account of cast of a deformed skull from a Helveto-Burgundian grave at Saint-Fres and of photographs of the neolithic graves of Chamblaudes, presented to the Society by Dr Schenck. The discussion of this paper turned to the subject of skull-deformation.

Hogarth (D. G.) Explorations at Zakro in eastern Crete. (Man, London, 1901, 186-187.) The earliest settlement revealed many broken vases of stone and clay whose Kamáres type is more closely related to the Mycenaean than had been suspected. The absence of neolithic antecedents suggests colonial or foreign origin. The later settlements yielded pottery from the acme of the Mycenaean period till its close and many other interesting remains, including "a hoard of 500 clay impressions of lost signet gems," consisting of 150 different types and affording "a priceless record of Mycenaean glyptic art and religious symbolism." Two tablets in the linear "Cretan" script were also discovered. It may be that "the aboriginal civilization of East Crete was independent of both the Kamáres and Mycenaean civilization." See also *Rep. Brit. Assoc.*, Lond., 1901, LXXI, 793-794.

Jelić (L.) Spomenici grada Nina. (Vjesnik Hrvatsk. Arheol. Društva, Zagreb, 1901, n. s., v, 184-192.) Treats, with 5 text-figures, of the antiquities of the town of Nin (Nona) in Dalmatia. Medieval walls, Roman gate, Clotter of St Maria are discussed. Continued from last volume.

Klaić (V.) Rimski zid od Rijeke do Prezida. (Ibid., 169-176.) Brief account of the Roman wall from Rijeka (Fiume) to Prezida.

Laszowski (E.) Prilog k hrvatsko-strajisti. (Ibid., 73-86.) Brief account, with 17 text-figures, of the seals of Croatian towns. Continued from Vol. I.

Laville (A.) Disque et lame en forme de grattoir magdalénien. (Bull. et Mém. Soc. d'Anth. de Paris, 1901, v^e s., II, 387-388.) Brief note, with 2 text-figures, of a flint disk and a scraper of Magdalenian type from Corniches.

Layard (Nina) Notes on a human skull found in peat in the bed of the river Orwell, Ipswich. (Rep. Brit. Assoc., Lond., 1901, LXXI, 789.) Skull found in January, 1901, at a depth of about four feet. Index 74.5; capacity 1,570 cc. See also *Man*, London, 1901, 151.

Lönnborg (S.) Finnmarkerna i inellersta Skandinavien. (Ymer, Stockholm,

1902, XXII, 65-90.) General account, with map, of the Finnish districts of central Scandinavia. The Finnish immigration into this region began in the fourteenth century.

Manouvrier (L.) Trepanation crânienne préhistorique post-mortem. (Bull. et Mém. Soc. d'Anth. de Paris, 1902, v^e s., III, 57-59.) Brief description of a case of trepanning in a fragment of skull from the dolmen of Menouville. See Fouju (G.).

Mielke (R.) Ueber den Gehrener "Opferheerd." (Verh. d. Berl. Ges. f. Anth., 1902, 38-46.) Treats, with 10 text-figures, of the so-called "Opferheerd," an elevation at Gehren near Luckau, supposedly used for sacrificial purposes. The excavations revealed the fact that the "place of sacrifice" is merely a boundary mark, with an old rampart. The remains found (fragments of pottery chiefly) indicate two cultures, late Slavonic and medieval.

Murisier (E.) La psychologie du peuple anglais et l'éthologie politique. (Arch. d. Psych. d. l. Suisse Rom., Genève, 1902, I, 261-277.) Critical review of Boutmy's recent book. Professor Murisier expresses the opinion that "a monograph on *us* would reveal to us, better perhaps than a larger and apparently more complete study, the character of the English people; while a monograph on the *sense of the ridiculous* would constitute the best psychology of the French people."

Myres (J. L.) Note on Mycenaean chronology. (Man, London, 1901, 175-176.) Declines to agree to the statement that "Mycenaean remains in Cyprus last down to the eighth century B.C. (possibly later)."

Ostermann (S.) Paleolitski čovjek i njegovi savremenici iz diluvija u Krapini u Hrvatskoj. II. (Vjesnik Hrvatsk. Arheol. Društva, Zagreb, 1901, n. s., v, 246-247.) Second part of a brief sketch of paleolithic man and his contemporaries of the diluvium at Krapina, Croatia. Human and animal remains are considered.

Porčić (J.) Prehistorijske naselbine iz okolice Erduta. (Ibid., 177-183.) Brief account, with 4 figures, of prehistoric settlements about Erdut and the finds there.

Reinach (S.) Les fouilles de Phastos en Crète. (*L'Anthropologie*, Paris, 1901, xii, 678-684.) Resumes, with 4 text-figures, the recent investigations of Halbherr and Pernier at Phastos in Crete, 1900-1901. The palace is treated of in particular. Beneath the palace lie the remains of a neolithic "station."

Report on the excavations at Arbor Low, August, 1901. (*Rep. Brit. Assoc.*, London, 1901, LXXI, 427-440.) General account of excavations at the stone circle of Arbor Low, Derbyshire, by H. S. Gray: notes on the stone implements by H. Balfour; on the human skeleton by J. G. Young. The stone implements were few and of well-known neolithic forms. The skeleton is probably due to a later interment and is not neolithic.

Richardson (R. B.) A series of colossal statues at Corinth. (*Ann. J. Archaeol.*, Norwood, Mass., 1902, vi, 7-22.) Brief account, with 6 plates and 10 text-figures, of "a series of colossal statues of Parian marble just inside the Agora, a little southwest of the west buttress of the Propylaea." The remains in question are Roman of about the second century and represent some triumph over the "barbarians."

Richet (C.) L'état stationnaire de la population de la France est-il un danger? (*Rev. Scientif.*, Paris, 1902, 4^e s., xvii, 257-262.) A reply to the article of M. Le Bon in the *Revue Bleue*. According to M. Richet, Le Bon's arguments that more equal distribution of taxation avails nothing, that other countries of Europe have a decreasing natality, that a country small in population may still be great, that peoples can become great by agriculture, etc., are all false or fallacious. The state, the author thinks, has a right, by wise laws, to defend itself against the abdication of the individual.

— Les démoniaques d'après les représentations populaires. (*Ibid.*, 359-368.) This general discussion of "demoniacs in popular art," which is illustrated by 14 text-figures, is extracted from the author's forthcoming volume, *L'Art et la Médecine*.

Rivière (E.) Deuxième note sur la lampe en grès de la Grotte de la Mouthe, Dordogne. (*Bull. et Mém. Soc. d'Anthr. de Paris*, 1901, v^e s., ii,

624-625.) Gives the results of the chemical examination by M. Bartholin of the residue of combustion in the stone lamp from the grotto of La Mouthe, in Dordogne. See *American Anthropologist*, 1902, iv, 158.

Ross (T.) Excavations at the Roman camp at Inchuthill in Perthshire. (*Rep. Brit. Assoc.*, Lond., 1901, LXXI, 791.) Usual finds reported;—pottery, bricks, tiles, etc.

Schmidt (H.) Ueber alt-Europäische Gefäss-Ornamentik. (*Verh. d. Berl. Ges. f. Anthr.*, 1901, 441.) Brief abstract. The author holds that the geometric decoration of pottery developed in Europe. There are two great parallel decoration-regions, the old Aegan and the neolithic of northern Europe. Both are transferences of ornamentation of the human body to clay vessels. The Trojans, he thinks, were of European origin, as their pottery-ornamentation indicates. See also page 538.

Schmit (E.) Un cimetière gaulois découvert à Châlons-sur-Marne par M. René Lemoine. (*Bull. et Mém. Soc. d'Anthr. de Paris*, 1901, v^e s., ii, 718-723.) Brief account of the investigation of 16 graves in a Gaulish cemetery at Châlons-sur-Marne by MM. Lemoine and Schmit in 1901, and of the objects there discovered, human remains, etc.

Soteriades (G.) The Greek excavations at Thermos. (*Rec. of Past*, Washington, 1902, i, 173-181.) Brief account, with 2 plates (4 figs.) and 6 text-figures, of the excavations carried on in 1897 by the author (on behalf of the Greek Archeological Society) at Thermos, "the political and religious center" of the Aetolian League, which flourished in the third and early part of the second century, B.C., and the remains there discovered. These were chiefly: A long portico with Doric columns with remains of buildings and statues in front (3d century, B.C.); two temples,—of which the larger, as the other remains suggest, was rebuilt about 200 B.C. Many interesting terra-cottas, roof-tiles (with archaic heads), etc., were also found; likewise a fragment of a metope, and some inscriptions, bronze objects, bits of geometric vases. The careful examination of the temple-site revealed the fact that an altar first existed, then

Soteriades—Continued.

temples of the eighth and the sixth century, and lastly the inferiorly rebuilt temple of the second century. Evidences of Aetolian buildings at Thermos in the seventh or eighth centuries also occur. These excavations, according to the author, prove the truth of many statements of Polybius, etc.

Sumner (W. G.) Suicidal fanaticism in Russia. (Pop. Sci. Mo., N. Y., 1902, LX, 442-447.) Based on Sigorski's account of the suicidal epidemic in the farmsteads of Tirmova, in the Dniester valley, published in 1897. The religious element in this epidemic by which 25 persons lost their lives in 1896 has been overestimated.

Thieullen (A.) Silex bijoux diluviens. (Bull. et Mém. Soc. d'Anth. de Paris, 1901, v^e s., II, 603-608.) Brief account, with 4 text-figures, of what the author terms "jewels" and fetiches of flint from the diluvium, with reply to criticisms of his previous paper.

Tocher (J. E.) and Gray (J.) The frequency and pigmentation value of surnames of school-children in East Aberdeenshire. (Man, London, 1901, 153-154.) Résumés the results of the study of the surnames and pigmentation of 14,561 children,—practically all of East Aberdeenshire. The pigmentation of Highland surnames (63 representing 13 to 14 % of the population) "corresponds closely with the pigmentation in their districts of origin." The darkest pigmented surnames are found in the fishing-communities, suggesting a Belgian origin. The authors find "a wide variability in the pigmentation of different surnames," which seems to indicate that "septs or clans, as represented by surnames, tend to retain distinct physical characteristics." The calculation of the Highland element according to pigmentation-surnames agrees with the estimate from anthropometric data (14 %). Of all the surnames noted (751 in number) *Miles*, counting 267, was the most frequent. One-half of the surnames belong to 950 persons and one-half of the population has only 12 % of them. See also *Rep. Brit. Assoc.*, Lond., 1901, LXXI, 799.

Vauville (O.) Silex néolithiques. (Bull. et Mém. Soc. d'Anth. de Paris, 1901, v^e s., II, 715.) Brief note concerning

76 neolithic flints from Montfort-l'Amaury (Seine-et-Oise) presented to the Society.

Verneau (R.) Les récentes découvertes de S. A. S. le Prince de Monaco aux Baoussé-Roussé. Un nouveau type humain fossile. (C. R. Acad. d. Sci., Paris, 1902, CXXXIV, 925-927.) Brief account of the important find of human remains in the famous caves of Baoussé-Roussé, near Mentone, in the part known as the *Grotte des Enfants* (in 1874-5 two skeletons of children were discovered there). At a depth of 1.90 m. an entire human skeleton was found and two others at 7.65-7.75 m. The implements found were of the Mousterian type. Of the last two skeletons one is that of an old woman, the other that of a young man (nearly adult). The stature is 1.57 m. and 1.55 m. respectively, the cephalic index 68.58 and 69.27. The head is disharmonic, with broad face. In this, as well as in the low and large orbits, the two skulls resemble the Cro-Magnon type. The most remarkable feature, however, is "the very negroid character of the lower part of the face, and of the nose." There exists also an enormous sub-nasal prognathism. The upper limbs are also largely developed. The author proposes to style "type de Grimaldi" this new variety of man in southern Europe, the discovery of which "proves among our ancestors we must include individuals of a negroid type."

Volkov (T.) Nouvelle découverte de représentations figurées des Scythes. (Bull. et Mém. Soc. d'Anth. de Paris, 1901, v^e s., II, 717-718.) Brief account of a gold plate with *repoussé* figures of divers Scythian scenes, found by N. Henze in a *barrow* at Babykha (Kiev). One is a boudoir, another a sacrificial scene. M. Volkov considers this a remarkable find.

Voss (A.) Die Briquetage-Gebiet im Seillethal in Lothringen und ähnliche Funde in der Umgegend von Halle a. S. und im Saalethal. (Verh. d. Berl. Ges. f. Anth., 1901, 538-544.) General account of the "brick" finds (large masses of burned clay of diverse form, some prismatic, others cylindrical) from the valleys of the Seille and Saale. Opinions as to the use of these "bricks" are wide apart,—foundations for build-

Voss—Continued.

ings, blocks (when heated) for crystallizing salt from water, etc., but experiment has shown that the second was probably the real use.

— Weihnachts-Gebräuche in Böhmen und Nachbarschaft. (Ibid., 544.) Brief note on the puppet-figures of Nicolo (St Nicholas) and his adjutant "Krumphus," used in Christmas festivities in Bohemia, etc.

Wiklund (K. B.) Finnska språkets nuvarande utbredning i Värmland och Grænsfinnskog. (Ymer, Stockholm, 1902, XXII, 15-18.) Brief account, with map, of the present range of the Finnish language in Värmland and the "Grænsfinnskog." The author visited "the Finn wood" in 1894.

Willett (E.) On a collection of palæolithic implements from Savernake. (J. Anthr., Inst. Lond., 1901, XXXI, 310-315.) Brief account, with two plates (14 figures), of a series of flint implements, — oval type, hammer-stones, wedge-shaped stones, rimers or borers, throwing-stones, — of "a marked individuality, as a whole," from Kneave Farm, near Savernake. As to the cause of the polished surfaces on some of these flints divergent opinions were expressed in the discussion.

Zaborowski (S.) Crânes anciens et modernes de la Russie méridionale et du Caucase. (Bull. et Mém. Soc. d'Anthr. de Paris, 1901, 7^e s., II, 640-666.) Discusses, with a number of cranial measurements, the Cro-Magnon race and the type of the oldest *Eurans* (Simiela, Kobylnowa, etc.); skulls from a Neolithic grave in the Dvintchio district of Elisabetopol and from Temiro-Kala near Kars and their relations to the Karabudakh skull and the ancient Medie stock; crania from Abbas-Tuman, government of Tiflis, and their relations to the modern Georgians and Persians; origin of the Georgians; a modern deformed skull of ancient type from Daghestan and the probable persistence of the old custom of deformation till today; crania from the old fortress of Baku and their diverse origins. According to M. Zaborowski "the crania of the oldest *Eurans* pass from the Cro-Magnon race to the type of the primitive neolithic or Celtic blonds." The Medie he styles "Tur-

nian." The modern Georgian, descendant of "the primitive Caucasian of Samthavro," has suffered a *cap-prochement* to the type of the modern Persians. The craniology of Baku is mixed by reason of the occupancy of the place, which dates only from the sixth century A.D., by Arabs, Persians, Turks, Russians.

— La caverne d'Okopa. (Ibid., 710-712.) Résumés the recent publication of Czarnowski on his investigations in the Cavern of Okopa (near Ojców) in the Cracow region, so celebrated for its prehistoric caves. The "station" of Okopa appears to belong to the first part of the neolithic period.

AFRICA

Ankermann (Dr) Die Afrikanischen Musikinstrumente. (Ethnol. Notizbl., Berlin, 1901, III, Hft. 1, VII + 1-154.) This excellent monograph on African musical instruments is accompanied by 171 text-figures and 5 distribution maps. The subject is treated under three heads: Description and classification (stringed instruments, the *saxa*, wind-instruments, percussion-instruments, — skin-drum, wooden drum, bell, *marimba*), geographical distribution, development, and origin. The collection in the Berlin Museum upon which the monograph is based numbers 180 stringed instruments, 220 drums, 440 wind-instruments, etc. Of stringed instruments the musical bow, the oldest and simplest, seems to be the most widely spread; the *saïka* is limited to Madagascar. In North, East, and South Africa the sinews of animals are generally used for strings, in West Africa the fibers of plants. The distribution of the *saxa* has been influenced by the sea-faring Kramen. The drum, "the negro's indispensable musical instrument," is found practically over all Africa, the only cases of its absence noted being in Urundi and among the Bubi of Fernando Po. The *marimba* occurs in three distinct regions, the Congo-basin, etc., of South Africa; in the country of the A-Sandeh and adjoining parts; the Mandingo country. Dr Ankermann recognizes in Africa 10 musical "provinces," each of which has instruments generally characteristic of it. Of these "provinces" two (North African, Madagascar) are

Ankermann—Continued.

Asiatic in character, three others are marked by ancient Egyptian resemblances (and Asiatic?), while four (Zambez, Congo, East African, Mandingo) may be called really African and perhaps also the South African (very poor in musical instruments). From the simple musical bow the various string-instruments have been developed, — the author, however, is inclined to believe that the discovery of the tone-giving of tense fibers preceded the invention of the bow. Of wind-instruments the simple pipe is the most primitive. The origin of the various sorts of drums is not as clear as might be. Concerning the *marimba* Dr Ankermann considers that it may have been independently developed in Africa and Asia. It is really a "musical instrument" in our sense of the term.

Danjou (Dr) Objets provenant de Madagascar. (Bull. et Mém. Soc. d'Anth. de Paris, 1901, V^e s. II., 630-634.) Brief notes on a Tanala shield (and the cult of the dead), some bundles of little stakes used to make pathways impassable for the enemy, several fetiches, a carved spoon and one imitated after the European model, all collected by Drs Danjou and Conan from the east coast of the island.

Felkin (R. W.) A collection of objects from the district to the southwest of Lake Nyassa. (Maa, London, 1901, 136-137.) Brief notes, with 3 figures in text, on a scraper-dagger, two combined dagger-beer-ladles, an iron fighting-axe, and a stabbing-spear.

Frazer (J. G.) South African totemism. (Ibid., 135-136.) Brief note on the data in Dr Theal's recent account of the religious beliefs, etc., of the Bantu tribes. Mr Frazer thinks that the facts in question make "the totemism of the Bantu tribes of South Africa resolve itself into a particular species of the worship of the dead,—the totem animals are revered as incarnations of the souls of dead ancestors." This is close to the Wilken-Tylor theory.

Fülleborn (F.) Ueber künstliche Körperveranstaltungen bei den Eingeborenen im Süden der deutsch-ostafrikanischen Kolonie. (Ethnol. Notizbl., Berlin, 1901, II, Hft. 3, 1-29.) Treats, with 6 plates and 85 text-figures, of artificial

bodily mutilations, etc., among the native tribes of the southern part of German East Africa (scar-tattooing; knocking out, filing, etc., of teeth; perforation of upper and lower lips; perforation of nostril; perforation of lobe of ear; bodily mutilations as punishment; treatment of hair of head and of body; artificial coloration of the body). Tattooing among the Wayao, Makua, Wambara, and Nyassa peoples is discussed with some detail. The extent to which tattooing is carried on may be seen from the figures of a Milonde man on page 10, and of a Myao on page 7. Like mutilations of the teeth, tattooing is practised "chiefly for beauty's sake." Lip-boring seems to be confined almost entirely to the women, and the perforation of one nostril is very common among the Wayao and Makua women. Ear-piercing is not of general occurrence. Bodily mutilation as punishment is very rare (in the case of a Mwemba man, both hands, nose, upper lip, and penis had been removed). Among the Wanyakyusa, Wangoni, etc., the strangest fashions of hair-dressing (shaving in spots; use of grease, mud, etc.; plaiting) are in vogue, even for children. Eyelashes are often removed; eyebrows, hair on genitals and armpit shaved off, etc. The Wanyakyusa and Wakesi redden their bodies with ground dyewood, and, as a sign of mourning, their women especially color the head and upper part of the body white. Painting-white for other reasons is also in use.

Huot (M.) Les peuplades de l'Oubangui et du Bahr-el-Ghazal. (Rev. Scientif., Paris, 1902, 4^e s., XVII, 301-306, 394-400.) Treats of the tribes of the Ubangi (Bondjos, Banziris, Songos, Vakomas, N'Sakaras, Zanies (Niam-Niam), Diakos, etc. The so-called Bondjo tribes, though of diverse origins, appear to have almost identical manners and customs. The *motif* of inter-village wars is said to be cannibalism,—some aspects of "the struggle for life" are still to be seen here in all their ferocity (the crushing of the weak by the strong, etc.). The Bondjos have received their name from the light color of their skin. In house-building, tattooing, costume, ornaments, etc., the Banziris differ somewhat from the Bondjos, but generally resemble them in manners and customs. At the death-festivals

Huot—Continued.

human flesh is eaten and in war-time the bodies of slain enemies,—otherwise they are not anthropophagous. The Songos belong to the same race as the Banziris. Unlike the Songos the Yankomas are industrious, busy, and active. They are workers in iron and copper especially. The country of the N'Sakaras is the "land of petty sultanates." The Quarres (of the Zande country) the author describes as "the most hideous negroes in the world." The Gabouns have recently been decimated and reduced to slavery. The Zandes are mixed descendants of the redoubtable Niam-Niam. They are noteworthy for not using the ordeal of poison, although they possess poisoned arrows. The Dinkas of the region studied are "a race apart." Their legs are of such a length (adaptation to marshy *milieu*, like the birds, etc.) as to give one the impression that they must be walking on stilts. Both men and women are tall and rather well-built. Villages, properly so called, do not exist among them, only large farms surrounded by plantations. On page 399 are given measurements of a typical individual from each of the peoples in question. From the author's figures the height of the Dinka is 1.70, height sitting 0.74 m.

Laidlaw (G. E.) Some ethnological observations in South Africa. (*Amer. Antiq.*, Chicago, 1902, XXIV, 77-84.) The same facts as in the paper noticed in the *American Anthropologist*, 1902, IV, 336.

Littmann (E.) Abyssinian folk-literature. (*Princeton Univ. Bull.*, 1901, XIII, 14-16.) In the three chief modern languages of Abyssinia, as well as in the older Ethiopic, there exists a large folk-literature (proverbs, fables, fairy tales, riddles, songs in honor of kings, heroes, and warriors, wedding songs, dirges, etc.) about which not much is known. A number of proverbs, among them the "chain proverb" on the strength of woman, a brief animal-tale, a few lines of one of the old Amharic "Songs of the Kings," are given in English versions. Reference is made to Professor Gundl's *Proverbi, strefe, e racconti Abissini*, published in 1894, which contains much valuable folklore from the Amharic language. The author promises further studies of modern Abyssinian folk-

literature as well as an account of an Harari MS. in Arabic characters.

Myers (C. S.) Four photographs from the Oasis of El Khargeh, with a brief description of the district. (*Man*, London, 1901, 113-116.) Brief account, with a plate and 2 text-figures, of the Egyptian oasis of El Khargeh, the Christian necropolis north of the village of the same name; the ruined temple of Hibis, etc. The temple of Hibis was erected 321-424 A.C. by the Persian kings Darius I and II. El Khargeh was used before 1000 B.C. as a place of exile, and in 434 A.D. Nestorius was banished. At the present day, however, it has no Christian population. The early Christians of El Khargeh seem to have continued the old Egyptian practice of mummifying the dead, made offerings to the soul of the dead, used the symbol *ankh*, etc. On the walls are many interesting paintings of old Testament characters, early Christian saints, etc.

—The bones of Hen Nekht, an Egyptian king of the third dynasty. (*Ibid.*, 152-153.) Brief notice, with 4 text-figures (views of cranium) of the bones of Hen Nekht (ca. 3000 B.C.), "the earliest known king whose remains have been found." His tomb is near Gizeh. The skull was "very massive and capacious, and extraordinarily broad for an Egyptian,"—almost brachycephalic; and its features "agreed more closely with those of dynastic than with those of prehistoric skulls." The stature probably exceeded 1870 mm. (Egyptian average, later and prehistoric = 1670) and the proportions of the long-bones to one another were "such as characterize negroid skeletons, a condition frequently observed in the prehistoric period, and commonly in the later period of the early empire." Mr. Myers believes that this "giant king" is identical with the Sesochris of Manetho and the Menechiri of Eratosthenes,—both the same person. The broad-headed race to which this king belonged he would bring from Asia, rather than from Egypt. See also *Rep. Brit. Assoc.*, Lond., 1901, LXXI, 797-798.

Myers (J. L.) Collateral survival of successive styles of art in North Africa. (*Ibid.*, 102-103.) Brief account, with illustration from photograph, of the

Myres—Continued.

pottery for sale in the market of Khoms or Lebda in Tripoli in April, 1896. Three kinds of pottery occur there together: The rimmed long-necked bottles (North Africa, unchanged since the Arab conquest); large, ovoid water-jars, smaller, wide-mouthed jars, one-handled jugs, and open saucers (late Greco-Roman immediately previous to Arab conquest); hand-made middle-sized fire-smoked bowls of dull black clay (practically the survival of a neolithic type).

- A piece of early masonry at Chaouch in Tunisia. (*Ibid.*, 133-134.) Brief account, with text-figure, of a wall the style of which (suggesting Greek work of the sixth century B.C.) is "in complete contrast both with the unburnt stones of the prehistoric tumuli, and with the regular isodorous masonry of the Roman site below the hill." The author considers this another evidence that "in the sixth century, B.C., the material civilization of Carthage was already in great measure dominated by the higher art and industry of her Hellenic rivals."

Negreiros (A.) & Orban (V.) L'Angola. (*Bull. Soc. d'Études Colon.*, Bruxelles, 1902, ix, 165-202.) Second part of illustrated account of Angola. Contains a few notes on the native population.

Petrie (W. M. F.) The races of early Egypt. (*J. Anthr. Inst.*, Lond., 1901, xxxi, 248-255.) After briefly discussing sources and dates, the author describes the following types: aquiline (Libyan connection), plaited-beard (from Red Sea coast, or foreign invaders), pointed-nose (from highlands of eastern desert), tilted-nose (general type of middle Egypt at time of dynastic invasion), forward-beard (Lower Egyptian in origin), straight-bridged (conquering dynastic race from Red Sea region of upper Egypt), mixed type of fourth dynasty. On page 255 is a table showing the nature of head, nose, chin, beard, hair, dress in the various types, and the article is accompanied by 3 plates with 30 figures (portraits from the monuments). Dr Petrie wisely observes that "purity" of races in 5000 B.C. is as much a fiction as in 1900 A.D. He also "fails to see that craniometry has any serious evidence to bring against the connection of the pre-

historic people of Upper Egypt with those of ancient (or even modern) Algiers." The close relation of the prehistoric Egyptians and the Libyans seems fully established. The general conclusion reached is that "North Africa (Libyans), Egypt, and Syria (Amorites) were occupied by allied tribes of a European character."

- An Egyptian ebony statuette of a negress. (*Man*, London, 1901, 129.) Brief description (with plate) of "the finest piece of Egyptian sculpture on a small scale," found at Thebes about 1896 and now preserved at University College, London. The figure belongs to the eighteenth dynasty and represents a native of the Upper Nile.

— Egyptian cutting-out tools. (*Ibid.*, 147-149.) Brief account, with 13 outline text-figures, of copper knives for cutting textiles, etc., from the time of King Zer (4700 B.C.) to the nineteenth dynasty.

- The royal tombs at Abydos. (*Harper's Mo.*, N. Y., 1901, 682-687.) Popular account, with 8 text-figures, of recent discoveries.

Rabot (C.) Recent French explorations in Africa. (*Nat. Geogr. Mag.*, Wash., 1902, xiii, 119-132.) Illustrated account of the numerous scientific expeditions under French auspices in the regions of the Sahara, Sudan, Guinea, etc. A few notes on the people of the country.

Rivers (W. H. R.) The color vision of the natives of Upper Egypt. (*J. Anthr. Inst.*, Lond., 1901, xxxi, 229-247.) Gives results of examination of 53 men and boys from El Amrah and El Arabah in Upper Egypt. The tests were made in December, 1900, and January, 1901, with Holmgren's wools, Nagel's color-blindness method, and Lovibond's tintometer,—the 10 subjects from El Arabah had been examined a year previously by Mr Randall-MacIver. The Egyptian (Arabic) color-nomenclature is discussed in detail (Nagel's cards and Rothe's papers were used), and the general results compared with those obtained from the Murray islanders of Torres Strait. According to the author, "in the language employed for color by these peasants of Upper Egypt, we find exactly the same features as those which characterize primitive color nomencla-

Rivers—Continued.

ture in other parts of the world." It is interesting to find that occasionally a gray paper was called *Menakan* ("American") *asmer*. An influence of language seems noticeable in defective wool-matchings, also an imperfection of the Holmgren wool-test in the diagnosis of color-blindness. The proportion of the color-blind among the 50 individuals examined by Dr Rivers and Mr Randall-MacIver was 5%, rather more than among European races in general. The possibility is noted that "the various civilizations of Egypt may have passed over the fellâhin without affecting their mental development in any marked degree, and they may continue to have the same primitive ideas of color which their ancestors had several thousand years ago, just as they continue to use the *shaddaf* to irrigate their fields." In the discussion Mr McDougall expressed the opinion that "primitive vision corresponded to our sense of gray," the other senses for colors being subsequently differentiated.

Shrubsall (F. C.) Notes on crania from the Nile-Wells watershed. (*Ibid.*, 256-260.) Brief account, with tables of measurements, of two Monbottu, three Azandeh (Niam-Niam), one Bari, and one Bambute skull, all male except one Niam-Niam, and all in the museum of the Royal College of Surgeons, except the Bambute which is in the British Museum. According to Dr Shrubsall there are "very close resemblances between the Monbottu and the more southern Bantu peoples." The Azandeh are very dolichocephalic, the Monbottu mesocephalic. The Azandeh cranial capacity is also greater. Relationship with the Masai is suggested by certain cranial characteristics of the Azandeh. In the Monbottu and Bari crania the glabella and superciliary ridges are conspicuously absent, and only slight in the Azandeh. The skull of the Bambute pygmy agrees in many respects with those of the Akkas studied by Flower.

Staudinger (P.) Ueber einen künstlichen Kopf von den Ekhois (auch Khois) im nordwestlichen Hinterlande von Kamerun. (*Verh. d. Berl. Ges. f. Anthr.*, 1901, 533-534.) Brief account of an imitation of the human head in soft wood (with details of features, tattooing, etc.), not a mask, but probably used in connection with some

fetish. It is a remarkable development of rude negro-sculpture. The people from whom it was obtained dwell in the Niger estuary.

White (F.) On the Khamsi ruins, Rhodesia. (*Man*, London, 1901, 101-102.) Brief account of Khamsi ruins near Bulawayo.—walls of granite blocks, enclosures, fortified knolls, heaps of debris (pottery, implements, etc.), numerous circles or walls of burnt clay (indicating huts).—the style of the native dwellings at the present day is quite similar. The author recognizes three stages of culture at Khamsi: Stone age anterior to the ruins, the civilization of the rain-builders (ancient gold industry), and that of the builders of the clay dwellings.

ASIA

Alken (C. F.) The ancient Christian monument of Hsi-an-fu. (*Cath. Univ. Bull.*, Washington, 1902, viii, 125-192.) Historical description. The author believes the monument to be genuine. It was erected probably 780-783 and proves Nestorian influence in the Celestial empire. The inscriptions upon it tell of the introduction of a new religion from the west.

Balfour (H.) A spearhead and socketed celt of bronze from the Shan states, Burma. (*Man*, London, 1901, 97-98.) Brief description with plate. The spearhead was found in the bed of a tributary of the Mekong about 1876, the celt in the bed of a stream running into a tributary of the Salween. Such objects are rare in S. E. Asia. Both specimens are in the Pitt Rivers Museum, Oxford.

Belck (W.) Ueber Alterthümer in Amasia, Klein-Asien. (*Verh. d. Berl. Ges. f. Anthr.*, 1901, 449-452.) Account of the investigations by Hr Max Zimmer of the so-called "royal" graves at Amasia in Asia Minor, with 6 text-figures. The graves are probably ancient Greek, the rock-wall figures Armenian.

— *Forschungsreise in Klein-Asien.* (*Ibid.*, 452-522.) In this article, with 32 text-figures, Dr Belck writes of the cuneiform inscription of Hassankala (Pasilâk), the ruins of Amasia and neighboring places, the remains of the

Belck—*Continued.*

cyclopean wall of Boyuk Kala, the great temple at Boghazkoi, the ruins of Kara Uyük, Hittite inscriptions, the so-called "troglydyte-country" west of Casarea, etc. Budak Owa and the surrounding country seem to have been a Hittite kingdom afterward destroyed by the Cimmerians in seventh century B.C. The rock-dwellings were originally occupied by a "Turanian" people.

Crowfoot (J. W.) A Yezidi rite. (Man, London, 1901, 145-147.) An inquiry into Armenian stories about the Yezidi of Asia Minor, particularly the Melek Taus ceremony. Mr. Crowfoot thinks that Taus may be a form of Tammuz. Certain relations between the Yezidi and the Takhtadji of Lykia are suggested.

Danjou (Dr.) Sur le crime rituel. (Bull. et Mém. Soc. d'Anthr. de Paris, 1902, 4^e s., III, 69-75.) The author gives an account of the assassination of P. Thomas at Damascus in 1840 and of the "ritual murder" of Henri Abdehnour, a boy of 7 years, attributed to the Jews. In the discussion, M. Girard de Rialle thought the author was too credulous and his statement that "ritual crime" was habitual in Syria was far-fetched.

Ethnographic Survey of India in connection with the census of 1901. (Man, London, 1901, 137-141.) Extract from Government Papers with outline of scheme recommended by the British Association for the Advancement of Science and approved by the Indian authorities, who have sanctioned an expenditure of not more than Rs. 1,50,000 for the survey. Messrs. Thurston and Risley will be the chief directors. The survey is calculated to last four or five years and many valuable anthropometric and other data will be obtained.

van Gennep (A.) Origine et fortune du nom de peuple "Ostiak." (Keleti Szemle, Buda-Pest, 1902, 13-32.) Sketches, with bibliographical references, the history of the ethnic name *Ostiak*. After careful research the author concludes: The term *Ostiak* first appears in 1572 in a letter of Ivan the Terrible. It was first applied by the Russians to the population of

the high valleys of the western slope of the Urals, and afterward to certain trans-Uralian peoples, as far as the Yenesei. It has not had a fixed ethnological value and is no fair argument as to the origin, relationship, and migrations of the peoples to whom it has been applied. None of the etymologies (Ugrian, Turko-Siberian, Turko-Kirghiz, etc.) hitherto proposed is satisfactory. Up to the present the name *Ostiak* has been used to designate ten different groups of people. This essay is a model study in ethnic nomenclature.

Hill (E. J.) A trip through Siberia. (Nat. Geogr. Mag., Wash., 1902, XIII, 37-54.) Illustrated account of trip in July, 1901, by Amur river and Trans-Siberian railroad. Contains brief notes on the peoples of the country, —Cossacks, etc.

Hodson (T. C.) The native tribes of Manipur. (J. Anthr. Inst., Lond., 1901, XXXI, 300-309.) Treats briefly of the Meitheiis, Kukis, Nagas, etc., particularly the Manipuris proper or Meitheiis: Government, treatment of epidemics and droughts, clan divisions and taboo, evil spirits, priests, child-birth and naming, bride-getting, death and burial, seclusion, food-taboos, omen-taking, future life, rain-making, terrace-cultivation, etc. By language the Manipuris are closely allied to the Chin-Lushai-Kuki group, while "the people are in feature of the Mongoloid type, and in no way resemble the Aryan or Aryanized peoples of Hindustan." The position of "king" in Manipur is surrounded with "mysterious and interesting ideas and ceremonies," and the coronation of the Raja "is an imposing and interesting affair." Among the Manipuris "each year is named after some man, who (for a consideration) undertakes to bear the fortune good or bad of the year." He receives presents for a good year and, formerly, got into serious trouble for a bad one. The rain-making ceremony is often quite unique.

Huntington (E.) The prehistoric mounds of eastern Turkey. (Rec. of Past, Washington, 1902, 1, 163-171.) Brief accounts, with 3 plates (2 figs.) and 2 text-illustrations, of mounds near Samsun, Marsovan, at Chorum,

Huntington—Continued.

Kala Hissar, near Kelkeniz Kala, of conical type (on hills); also truncated, unsymmetrically conical mounds (on plains) at Garmuri, Ichmech, Telanzit, Tadem, Hokh, etc. The second sort of mounds are very abundant in the Haldi country, the region of Harput, the plain of Mush, etc. The first type seems to be "confined to the Hittite country west of the Euphrates," while the second is most abundant in the Haldi country, but "the two kinds occur together and cannot always be sharply distinguished." The mounds, which are quite uniform in shape, vary in size from one to six acres, and in height from 30 to 80 feet. During the Roman period (or later) "many of the mounds appear to have been utilized as sites for forts or other massive buildings," and sometimes circumvallated. On top of them (as at Hokh) ruined superstructures are found and Roman coins are occasionally unearthed. From the nature of a small mound at Ellinelik, it appears that some of these structures were, after being occupied some time, inundated by the lakes, etc., on whose shores they stood, and then re-occupied. Some may have been built for observational purposes. Belck thinks that some of them are the burial-places of the earliest Armenian kings. Some attribute them to the "Hittites." The author is of opinion that "the mound-builders were to some extent influenced by their neighbors in Babylonia or Assyria, or else immigrants from those countries invaded the northern region." The layers of brick in the mound at Hokh and the coffin-jars at Garmuri,—"both of which are distinctly characteristic of the Babylonian mounds,"—are held to be proofs of this. In most of the mounds implements of stone and bone are found, together with bones and pottery fragments.

Rao (T. K.) The Vánadis of the Nellore district. (Bull. Gov. Mus., Madras, 1901, IV, 87-115.) General ethnographical account,—name, origin, physique, cranial and head-form, habitat and population, caste and ordeal, society, language, religion, marriage, child-birth, soothsayers, burial, personal habits and accomplishments, fishing and hunting, dance, folk-medicine, work and indolence, honey-

gathering, crime (the Vánadis are no "criminal class," as once was believed), etc. The article is an M. A. thesis at the University of Madras. Pages 106-113 are by Mr K. Rangachari and treat of the house-names, production of fire (by friction), food, marriage-ceremony, menstruation, *chinmadinamu* and *pedianamu* funeral ceremonies, etc. The photographs from which the illustrations were made (plates VIII-XII) were also taken by Mr Rangachari. The Vánadis are a dolichocephalic, dark-skinned, short-statured people of Telugu speech and Hindu religion (rude and primitive). Morality is said to be "at a low ebb." Every village or circle has one or more soothsayers and the future is predicted in song. Burial is common, cremation rare. The dance is rude and "full of indecent suggestions." The attempt to make them work has not been a success. Their character is much better than formerly described. During 1881-1891 the Vánadis increased in numbers 34.6 %.

Reinach (S.) Les mythes babyloniens et les premiers chapitres de la Genèse. (L'Anthropologie, Paris, 1901, XII, 683-688.) Critical review of a recent work by the Abbé Loisy on "Babylonian Myths and the First Chapters of Genesis." The Hebrew version is but a memory of the old cosmogonical myths,—neither the mythological nor the poetic form survives in the Bible. The high moral cult of the Hebrews exploited them to its own profit. Legend was submerged in law.

Skeat (W. W.) Natural history and ethnography of the Malay peninsula. Report of the Cambridge Expedition to the Malay provinces of Siam. (Rep. Brit. Assoc., Lond., 1901, LXXI, 431-424.) The anthropological section treats of physical types, dress, ornaments, weapons, hunting and fishing, fire-making and cooking, implements, coins, weights and measures, trade, agriculture, metal-work (iron, copper, tin, gold, and silver), carpentry and cabinet-work, pottery, rope and string making, mats and basketry, spinning and weaving, prisons and torture, ceremonial rites and games, popular religion and folklore. An abstract of part of the Report is also published in *Man* (London, 1901, 177-180) under the title *Notes on the ethnography of*

Skeat—Continued.

the Malay peninsula, with 1 plate (6 figs.) and 2 text-illustrations. Two physical types are distinguished,—a taller whose build and stature, etc., "approach that of the Maori, and a shorter, of undoubted Malay stock. The cruel processes of torture and imprisonment under the old native law are passing away. An interesting relic of barbarism are the performances of the local "medicine men" or magicians, some of which are very impressive as burlesques. Far from believing the Malays to be "an essentially barbarous people," Mr Skeat considers that they "are essentially a soft-mannered people." Moreover, "the better class of them, i. e., the forest-dwellers as distinct from the town-dwellers, are not only often first-rate woodsmen, but naturally gentlemen, and most companionable, fond of their home and family, loyal to a fault to their natural chiefs, honest as any of our own peasantry, keenly alive to a sense of their own honor." He rightly refuses to think that such a race would necessarily be improved by "forcing it neck and crop into the strait-jacket of our own civilization."

Thurston (E.) *The Dravidian head.* (Bull. Gov. Mus., Madras, 1901, IV, 79-86.) Discusses briefly, with 2 plates and 6 tables of measurements, the form of head of the Dravidian tribes of the southern districts of Madras and of the Bellary district,—altogether 1176 subjects, including 32 Todas. The tribes of Bellary seem to be broader-headed than the others studied; only 2.1% of the Dravidians of the southern districts had a cephalic index exceeding 80, while 37.8 of the Bellary Dravidians had such an index. Another fact brought out is that, "so far from the Dravidians being separated from the Todas by reason of their higher cephalic index (as Taylor held), this index is, in the Todas, actually higher than in some of the Dravidian peoples." The general conclusion reached is that "the question of the type of the Dravidian head is not nearly so simple and straightforward as I had imagined."

—Miscellaneous. (*Ibid.*, 114-128.) Brief articles on the convade (114-117), measurements of 25 Koramas, allincoe of Madras (118-120), earth-eating by

natives of Cochin hills and Mysore, the Kathira or scissors people, the Toda petition for enjoining monogamy and for the prompt disposal of corpses, weighing-beams in Malabar, the Mannans of the foot-hills of Travancore (126-128). A sort of convade seems to have prevailed among the Koramas and some other people of southern India. Brief descriptions are given of four albinos of Madras and the fact noted of "a series of cases of albinism in 6 successive generations of a Tamil family." Earth-eating, chiefly by females, occurs on the Cochin hills and is common among the women of Mysore during pregnancy. The Mannans (of Tamil stock) are noted for "the readiness with which they fraternize with Europeans." Nephew-succession prevails among them. They are said to worship the sun.

Zaborowski (S.) *Piège à puces du Yunnan.* (Bull. et Mém. Soc. d'Anth. de Paris, 1902, V^e s., III, 51-52.) Brief account of a flea-trap of bamboo with glue, used to put in bed, in one's clothes, etc., from Yunnan in southern China.

INDONESIA, AUSTRALASIA,

POLYNESIA

Balfour (H.) *Strangling-cords from the Murray river, Victoria, Australia.* (Man, London, 1901, 117-118.) Brief account, with text-figure, of two rare "strangling cords" from the Watty-Watty or Litchoo-Litchoo tribe (extinct) of the Murray river, now in the Pitt Rivers Museum, Oxford.

Chamberlain (A. F.) *The American Indian element in the Philippines.* (Amer. Anth., Chicago, 1902, XXIV, 97-100.) Gives list of cultivated plants introduced from America. Also refers to transportation of American Indian soldiers, slaves, and "criminals" under Spanish auspices.

Crump (J. A.) *Trephining in the South seas.* (J. Anth. Inst., Lond., 1901, XXXI, 167-172.) Brief account, with 2 plates, of three cases of trephining (for injury from sling-stones, clubs, etc.) among the natives of New Britain, New Ireland, etc. The operation-mortality is about 30%, the "doctor" is the *tona-papai* or tribal shaman, who uses

Crump—Continued.

a piece of shell or a flake of obsidian.

The operation is also performed for pressure on the brain, epilepsy, and the like. Idiocy sometimes results. In one of the New Ireland villages trephining has "become fashionable, and a handsome girl or boy is generally persuaded to submit to the operation as an aid to longevity." To Mr. Crump's paper are appended detailed discussions of the specimens by Mr. V. Horsley, with comparative references to Peruvian skulls, etc.

Dieseldorff (A.) Die petrographische Beschreibung einiger Steinartefakte von den Chatham-Inseln. (Ztschr. f. Ethnol., Berlin, 1902, XXXIV, 25-29.) Gives the results of the examination of the specimens (axes, chisels, knives, etc.) brought by Dr. Schaumsland in 1897 from the Chatham islands, which have been otherwise studied by Dr. Schurtz. Of the objects examined 1 is of limestone, 1 of gray flint, 4 of jasper, 10 of sericite shale, 40 of feldspar-basalt and 10 of micaceous basalt, 10 of nepheline basalt, 2 of hornblend andesite, 1 of trachyte, and 2 of trachytic or andesite tufa.

Edge-Partington (J.) An object of unknown use and locality. Native ornaments from the Solomon islands. Forgeries of New Zealand stone implements. The Australian ethnological expedition. (Man, London, 1901, 100, 116, 181.) Brief descriptions, with 3 text-figures, of a wooden object from Rotumah (?), stone armlets from New Georgia, etc., native money. Warns against the numerous forgeries of Maori polished stone implements. A letter from Professor Spencer reports success with the Kaitish natives.

Gray (J.) Measurements of Papuan skulls. (J. Anthr. Inst., Lond., 1901, XXXI, 261-264.) Gives tables of measurements of 124 skulls, of which all but 6 (from German New Guinea) are from the Purari delta and elsewhere on the shores of the Gulf of Papua. The presence of two maxima suggests the existence of two racial elements unless the disturbing element be due to female skulls. The range of the cephalic index is from 63.5 to 85.5.

Haddon (A. C.) A Papuan bow-and-arrow beam. (Man, London, 1901,

145.) Brief description (with plate) of the method of drawing blood by bow-and-arrow (shooting the arrow repeatedly at the affected part), at Bulaa, in the Hood peninsula, Rigo district. The "secondary release" of Monie is employed. A specimen of this beam from southern New Guinea is in the Pitt Rivers Museum at Oxford.

Hiller (H. M.) Manners and customs of the people of southern Borneo. (Bull. Geogr. Soc. Phila., 1902, III, 51-64.) Gives, with 3 plates (natives, houses, etc.), data obtained in 1897 among the Kyans, Punans, Buhits, Kenyahs, Bahaus, Peugs, Long Wais, Tanjungs, Kantus, etc. The ethnographical and natural history specimens obtained are now in the Museum of the University of Pennsylvania. Among the topics considered are the rites for appeasing or gaining the favor of the spirits of "a foreign country," food, head-hunting (*panjung-mind*) now rare, — purchasing old heads from other tribes is a ruse sometimes adopted to hoodwink the spirits, — primitive industries, children, community-houses, consulting of omens, ideas of the after-life and the departure of the soul (mobile log-bridge, etc.), the other world, etc. For any man who "refuses to get married" there is a "second and final death (his soul is devoured by a huge fish) from which there is no resurrection." Slavery among the Borneans is not such a hardship as it is in a civilized country. In matter of population the Kyans hold their own, while the Kantus and Ihaus are slowly increasing. No one tribe can be taken as a type.

Hose (C.) and McDougall (W.) The relations between men and animals in Sarawak. (J. Anthr. Inst., Lond., 1901, XXXI, 173-215.) Details, with 2 plates, the animal-superstitions of the Kenyahs, with résumés of similar customs and beliefs among the Kayans, Kalamantans, Punans, and Ihaus or Sea Dayaks (particularly those of the last relating to the *aparang* or "spirit helper"). Among the topics treated are the cult of the hawk and other omen-birds (spider-hunter, trogan, woodpecker, hornbill, etc.), the pig ("plays a part in almost all religious ceremonies"), the domestic fowl (connected with capture of wandering souls), the crocodile, the dog, deer and cattle, tiger-cat, monkeys, etc. The gen-

Hoon—*Continued.*

eral religious ideas of the tribes in question are noted, and the particulars of a number of omen-ceremonies given. The Ilians "have numerous animal fables that remind one strongly of *Aesop's* fables and the *Brer Rabbit* stories of the African,"—the land-tortoise and the tiny mouse-deer figure in them as "cunning and unprincipled thieves and vagabonds that have the laugh against the bigger animals and man." They have also "a greater variety of myths and extravagant superstitions than have the Kenyaha and Kayans. The "spirit-helper" (a nagual-like idea) institution is important for the Ilians, but rare with the other peoples. The authors' conclusions are given at some length (pages 202-213). They are of opinion that "the various superstitions entertained by these tribes in regard to animals are not to be looked upon as survivals of totem-worship." A simpler and more satisfactory explanation is the development of totemism from the varieties of the *aya-rang*,—a view similar to those of Dr F. Boas and Miss Alice Fletcher concerning the totemism of the Indians of British Columbia and the Omahas.

Jordan (D. S.) On certain problems of democracy in Hawaii. (*Out West*, Los Angeles, Cal., 1902, xvi, 25-32, 139-149.) Illustrated general discussion of political and ethnic conditions. The author concludes that "if Congress favors the Hawaiians or Americans or both, at the expense of the still more numerous Orientals, it casts aside the spirit of democracy."

Laville (A.) Sur le caractère de certaines canaques. (*Bull. et Mém. Soc. de Anthr. de Paris*, 1901, 7^e s., 11, 289.) Brief notes, from a letter of M. Mamgot, on the natives of New Caledonia, a cocconut carving of a deity, shamans, etc. There are said to be three types distinguishable by language, habits, etc.

MacKinlay (W. E. W.) Memorandum on the languages of the Philippines. (*J. Anthr. Inst.*, Lond., 1901, xxxi, 212-218.) Brief notes on the general characteristics of Tagalo, Visaya, Bicol, Ilocano, Cayagan (Ibanag), Pampango, Pangasinan, and Calamiano, the eight "cultured and advanced languages," now written (besides their ancient alpha-

bets) in Roman letters; the four groups of languages of uncivilized and savage tribes,—northern Luzon, Mindanao-Jolo, Negros-Mindoro, Palawan (here also is the Tagbanna with its native alphabet),—Joloan and certain Mindanao tongues are written in an alphabet of Arabic origin. The author counts in the Philippines "8 tongues spoken by the civilized races and about 60 dialects of the savage mountain tribes,"—exclusive of the speech of the few Negrito tribes. Bicol "can be said to differ from Tagalo and Visaya as English and Scottish do." To this paper are appended the cardinal numerals 1 to 10 in Tagalo, Visaya, Bicol, Pampango, Malay, Pangasinan, Ilocano, Maguindanao, Ibanag (Cayagan), and Bagobo. Batac in the Palawan-Besilan group is stated to be "an exotic in the Philippines, and is used by the descendants of quite recent immigrants from Sumatra." The author's estimate of 60 for "dialects of savage mountain tribes" is much too high.

Mathews (R. H.) Ethnological notes on the aboriginal tribes of the Northern Territory. (*Proc. & Trans. R. Geogr. Soc. Australasia*, Brisbane, 1901, xvi, 69-90.) Deals briefly with the social organization, rites and customs, etc., of the native tribes of the Northern Territory of South Australia. A vocabulary of the Chingales dialect is added, with a brief appendix on the rock-carvings on Burnett river, Queensland. Among the natives in question every tribe consists of two phratries, each divided into four sections, eight divisions in all. All children born into the tribe bear the name of one of these and also that of some animal, plant, or inanimate thing, their totem. Among the men and women of his tribe every person is further distinguished from the rest by an individual name; he obtains also a secret name known only to the initiated. He has further a "titular" name referring to his initiation-degree, a "relationship" name, etc. In general children inherit the totem of their male parent. The marriages take place according to a "direct," an "alternative," and a "rare" classification. (Numerous tables of marriages are given.) The initiatory rites of circumcision and subincision are in vogue all over the northern territory except a part of the Northwest. An interesting

Mathews—Continued.

fashion of trapping hawks is described on page 77. Methods of fishing are also noted. Other topics treated of are yam-sticks, food, wind-breaks, water-bags, wooden vessels, sandals, shoes, feather-tuffs, incantations, shamans, weather, points of the compass, rock-paintings, the *jarrada* method (capture) of securing a wife, burial and death - retaliation (*warring - arree*), "rule - making," trading, weapons, scarification, cannibalism (found all over the territory). Mr Mathews thinks that the totemic laws of descent may turn out to be more fixed than appears on present evidence. The vocabulary on pages 87-89 consists of ca. 200 words. This article contains a mass of interesting information.

— Some aboriginal tribes of Western Australia. (J. & Proc. R. Soc. N. S. W., Sydney, 1901-2, XXXV, 217-222.) Discusses briefly the rules of marriage and descent, gives a list of totems, the names of the points of the compass, short account of language, etc., of certain tribes inhabiting the vast regions about the sources of Fitzroy, Margaret, and Ord rivers. The eight-section name-system is common among the tribes in question. The 8 points of the compass "are so familiarly fixed in their minds that in directing another person where to find anything, they call out the compass point in the most natural manner." A legend of these natives attributes the saltiness of certain lakes to the urine of a serpent-monster, who made all the rivers. The vocabulary given belongs to the Kija dialect, of Hall's creek. Circumcision and subincision are in vogue among all the tribes here considered. Like the aborigines of the Northern Territory, they also use the *mirra* (ornamented flat board) in ceremonial and magic dances.

— The Tharrawal language. (Ibid., 127-160.) Besides a valuable résumé of the characteristics of the Tharrawal (once spoken over the southeast coast of New South Wales from Port Jackson to Jervis Bay) this paper contains a brief account of the Gundungarra (spoken to the west of the Tharrawal) and the Dharnik (spoken to the north), with a vocabulary of the last language on pages 157-160. With respect to the Tharrawal, orthography, nouns, adjectives, pronouns, verbs, preposi-

tions, adverbs, conjunctions (very few), interjections and exclamations, numerals, etc., are treated. What Mr Mathews considers a new fact is that in Tharrawal "many of the nouns, adjectives, prepositions and adverbs, — in addition to the verbs and pronouns, — are inflected for number and person," — something not hitherto reported from Australia.

— The Thoorga and other Australian languages. (Amer. Antiq., Chicago, 1902, XXIV, 101-106.) Brief grammatical sketches of the Thoorga language of New South Wales and of the Tharrawal. The Thoorga has an inclusive and an exclusive plural, besides "the inflection of almost every part of speech for number and person."

Rivers (W. H. P.) On the functions of the maternal uncle in Torres strait. (Man, London, 1901, 171-172.) The maternal uncle and nephew are nearer akin, according to the views of the western tribes of Torres strait, than are father and son. The maternal uncle can stop a fight by a mere word, and at the initiation-ceremonies he has control of the boy. The nephew may despoil his maternal uncle of anything he wishes (cf. Fijian *vava*). Rivers considers that these customs, found in a tribe with paternal descent, are probably "vestiges of a previous condition in which descent was maternal, and the brothers of the mother were regarded as nearer kin than the father." See also *Rep. Brit. Assoc.*, Lond., 1901, LXXI, 800.

— On the functions of the son-in-law and brother-in-law in Torres strait. (Ibid., 172.) The son-in-law may not utter the names of his wife's relations and can only speak to his father-in-law through his wife. The brother-in-law can stop a fight (but his power is less than that of the maternal uncle), he attends to the funeral ceremonies when a man dies, has certain duties in connection with fishing, and has a fixed place in the canoe. At a dance a man must wear his brother-in-law's mask. These customs Rivers regards as "vestiges of a condition in which a man lives with and serves the family of his wife."

— Some emotions of the Murray islander. (Rep. Brit. Assoc., Lond.,

Rivers—Continued.

1901, LXXI, 801-802.) Such differences as exist are due to "varying sanctions of society (customs) rather than to distinctive mental constitution." The general condition of the Murray islanders is about that of the rural population of southern Europe or "any other simply emotional country folk." Lack of concentration is not a feature of these uncivilized races. The play of shame seems to have lessened the force of parental affection. Great differences of temperament occur. The expression of the emotions is "in no way different from what has been observed among Europeans."

Rosenbain (W.) Notes on Malay metal-work. (J. Anthr. Inst., Lond., 1901, XXXI, 161-166.) Treats, with two plates, of the making of a Malay *bris*, Malay goldsmith's tools, vessels of copper and white metal, *cera perduta* process, Malay lathe, chains made by casting. The specimens upon which the article is based were obtained by Mr W. W. Skeat in his recent expedition in the Malay peninsula. The Malay smith's tools "are simple and of a somewhat primitive construction, but do not differ very much from those to be found in a European smithy." The *bris*-making is described in detail. The microscopic examination showed that the laminated scroll is made up of layers of one kind of metal only. Much of the goldsmith's work is wrought (hammered, filed, chiseled, embossed). The hollow copper vessels are cast by a method recalling the ancient European *cera perduta* process. Casting chains is a striking feat of Malay metal-work. The process is simple and known to the women, but "the design and workmanship of the mold are proofs of great mechanical skill and ingenuity."

Schurtz (H.) Stein- und Knochengerräthe der Chatham-Inselaner, Morioren. (Ztschr. f. Ethnol., Berlin, 1902, XXXIV, 1-24.) Treats, with 5 plates (67 figs.), of the stone clubs, axes, and other implements, clubs, hooks, spearpoints, etc., of bone from Chatham islands, the home of the Morioren. An account of the islands and their now nearly extinct inhabitants is also given. Dr Schurtz concludes that "the culture of the Chatham islands is an outline of that of New Zealand, whose peculiarities

result chiefly from local differentiations favored by the seclusion and poverty of the area in question." The influence of the dark pre-Maori population, still quite noticeable in New Zealand, is proportionately more marked on the Chatham islands. The stone-clubs of the Morioren are more like the older Maori clubs. Their curved clubs are possibly of Melanesian ancestry. The best axes of the Morioren equal in polish those of the Maori. Among the specimens figured is a club of whale's bone. Some of the hooks are peculiar to the Morioren.

Shelford (K.) A provisional classification of the swords of the Sarawak tribes. (J. Anthr. Inst., Lond., 1901, XXXI, 219-225.) Brief descriptions, with 2 plates, of the varieties of the *parang* or sword of natives of Sarawak, Borneo: *parang liang* (of Kayans and allied tribes); *niabor* (the characteristic sword of the Sea Dayaks); *lunggai-lunggai* (a *niabor* with the handle of a *parang liang*); *niabor* (a Sea Dayak weapon); *jimpul* (of recent origin, hybrid between the *parang liang* and *lunggai-lunggai*); *bayu* (a Sea Dayak *parang* of modern origin); *pakayan* (the very characteristic *parang* of the Muruts); *parang pedang* (used by Malays and Milaks of the coast for jungle-felling, etc.); *latok* (of recent use by Malays and Milaks); *buku* (the sword of the Land Dayaks); *pandak* (the war-*parang* of the Land Dayaks). The *bris* and the *hompilan* are also met with in Borneo. Some of these swords, although intended primarily for use in warfare, "may also serve as agricultural implements or as carpentering tools, or *vice versa*."

Starr (F.) The Australian Museum. (Amer. Antiq., Chicago, 1902, XXIV, 93-96.) Brief account, with 2 text-figures, of the Ethnological department of the Australian Museum at Sydney, N. S. W. (founded in 1836). Perhaps the most unique specimens are the carved tree-trunks. An ethno-botanical collection is being developed, also an ethno-conchological. Mr Etheridge, the curator, is also having made a collection of life-molds of the body scarifications of the aborigines. The "Cook relics" are also in this Museum.

Thomson (B.) A stone celt from Tonga. (Man, London, 1901, 134-135.) Describes briefly, with 2 text-figures, a

Thomson—Continued.

celt of olive-green stone of the shape and finish of the New Guinea celt, an heirloom in the family of the king's father. It is clearly exotic but of uncertain date.

AMERICA

Baessler (A.) *Goldene Helme aus Columbien*. (Ethnol. Notizbl., Berlin, 1901, II, Hft. 3, 30-35.) Brief account, with 2 plates and 1 text-figure, of two pre-Columbian golden helmets from a grave in the San Francisco district, Department of Cauca, Columbia. Only four other such helmets (in the possession of the King of Spain) are known. The helmets (572 and 576 gr. in weight) are of 18 to 19 carat gold plate. Both are artistically worked, one more than the other. On one is the upright figure of a woman. The grave was probably that of a chief of importance.

Boas (F.) Some problems in North American archeology. (Amer. J. Archaeol., Norwood, Mass., 1902, VI, 1-6.) The archeology of America (with the exception of parts of Mexico, Central America, and western South America) deals with "peoples unfamiliar with the art of writing, whose history is entirely unknown." Dr Boas calls attention briefly to the archeological problems of the Pacific coast, where there are "four fundamental types of culture,"—the Eskimo of the Arctic, the Indian of Alaska and British Columbia, the Columbia river, and the California. The diversity of physical types here is very ancient. The modification of Alaskan Eskimo culture by that of the Indians, the new-arrival character of the Tsimshians, etc., the Columbia river as route for eastern influences on the coast, northern coast tribes' influence upon the Salishan stock, the recent intrusive character of the Eskimo in Alaska, the curious distribution of pottery on the Asiatic and American shores of the North Pacific (suggesting an early connection between the peoples of these districts), etc., are briefly referred to. The investigation of the Alaskan area is "one of the important problems of American archeology." Archeology in America must be pursued hand in hand with ethnological and linguistic methods.

Brant-Sero (J. O.) *Dekanawideh; the law-maker of the Caniengahakas*. (Man, London, 1901, 166-170.) Brief account of the unwritten law and government of the Caniengahakas (better known by the nick-name of Mohawks), as given to them by Dekanawideh, "probably ages before the era of Hiawatha," who founded the confederacy. Among the topics treated are: the evolution of the idea in the mind of Dekanawideh, with the principle of placing "the mothers of the nation" in supreme authority; female totemic councils; gentes; "owners of titles"; council-fires and mode of procedure thereat; hereditary system; ceremonies. The principal position in the council was occupied by the *turtle* ("the fountain of thought, goodness, and restricted authority"), while the *wolf* "occupied a position equivalent to that of the 'opposition' party." The *bear* was "speaker of the house" and record keeper. The Mohawks, the author tells us, are of all peoples in the world the most "indifferent to the perpetuation of their individual memories," and "no man or woman among them expects more glory than that which arises from a consciousness of having done a duty to the best of their individual ability." Mr Brant-Sero, who is a Canadian Mohawk, adds another to the suggested etymologies of the word *Iroquois*. This is *i-ik rongue*, "I am the real man," from *i-ik*, "self," and *rongue*, "man" in Mohawk. This is quite plausible—*i-ik rongue* could easily become *Iroquois* (pronounced at first *Irohot*, afterward *Irokwé*).

Brown (C. E.) Pierced tablets or gorgets in the W. H. Ellsworth collection at Milwaukee. (Wis. Archaeol., Milwaukee, 1902, I, 37-41.) Brief account, with plate (11 figs.) of 7 one-hole and 4 two-hole "gorgets," typical Wisconsin forms. The material is probably found in the state, although the opposite opinion has been commonly entertained.

Dorsey (G. A.) Hand or guessing game among the Wichitas. (Amer. Antiq., Chicago, 1901, XXIII, 363-370.) Describes game as observed by author,—"played in a spirit entirely different from that ever seen by me before among the western tribes." The objects used (the counting sticks, in particular) were

Dorsey—Continued.

also entirely different. Six sets of objects used and two drums are briefly described, with 3 text-figures. With the Wichitas the things of chief concern are the counting sticks; not the objects to be hidden, as is the case with most of the other plains tribes, quite unpretentious things being often used. The drums, which are painted symbolically, are employed also in wardances. The participation of women in the religious elements of the game and the sedate and dignified character of the performance convinces the spectator that "a deep religious significance underlies at least one of the games of the American aborigines."

Early Western History—from documents never before published in English. (Out West, Los Angeles, Cal., 1902, XVI, 56-59, 293-296.) Critical translations of letters of Fray Juan Crespi, Fray Francisco Palou, and Miguel Costanso dated in 1772; and of the diary of Father Junipero Serra, March 28-June 30, 1769. These documents contain a few notes on the Indians of the country.

Fewkes (J. W.) Sky-god personations in Hopi worship. (J. Amer. Folk-Lore, Boston, 1902, XV, 14-32.) Treats, with 2 plates, of the dramatization of the return of the sun-god in the *Pamutli* festival at Walpi in 1900, the actions of the man personating the sun-god, the departure of the clan-ancestors, the germ-god Masau, the *Pamutli* festival at Sichomovi, sun-god personations as masked dancers, the sky-god as a bird-man, the *Shaiako*—representation of sun-gods, the winter-solstice dramatization of the advent and departure of the sun-god, the personation of a sun-god wielding lightning, idol of the sky-god with lightning symbols, etc. According to Dr Fewkes a composite picture of the various personations of the sky-god "reveals a being of bird and human form, bearing lightning and rain designs or symbols of the same import." This concept, the author "is tempted to regard as universal among races in the environment of agricultural culture." Dr Fewkes believes that "myth and ritual arose and developed simultaneously," and also that, "in early stages the existence of one implied that of the

other, but ritual, which among primitive people is made up largely of personations of supernaturals and dramatizations of their acts, has furnished much of the material from which complicated mythologies have developed."

Frazer (J. G.) Men's language and women's language. (Man, London, 1901, 154-155.) Brief note supplementary to author's paper in *Fortnightly Review* for January, 1900. Cites evidence from D'Orbigny concerning the Chiquito Indians.

Gerend (A.) Archeological features of Sheboygan county. I. The village sites. (Wisc. Archeol., Milwaukee, 1902, I, 13-21.) Treats, with 6 text-figures, of Sheboygan village and New Amsterdam sites (largely from personal observation), and the objects (flints, fragments of pottery, copper implements, etc., bone awls, harpoons, etc., human skeletons). According to the author, "the ancient village sites of Sheboygan county appear to form a part of an uninterrupted series of similar settlements each about a day's journey apart along the lake beaches." Grooved stone axes and celts are rare. Bone implements are not very common. The pottery found indicates great ability in workmanship. Some 25-50 skeletons have from time to time been found. At New Amsterdam, "the sands were in places strewn with the intermingled bones of men and beasts to such an extent that wagon-loads might have been removed without its making any great difference in the quantity." The pottery here is thicker, wider, and less artistic. The inhabitants of Sheboygan county at the coming of the whites were Potawatomi, Sauks, and Foxes.

Hamilton (H. P.) Copper implements. (Wisc. Archeol., Milwaukee, 1902, I, 7-11.) Brief account, with one page illustration, of copper implements, ornaments, and chips from ancient village sites. The fact that "many of the copper implements have the same amount of oxidation and also the same general appearance of those so-called pieces of float copper," leads the author to remark that "the time required for this corrosion must have been much the same to produce the same results, and it opens a startling line of conjecture."

Hartman (C. V.) *Arqueología underground en Costa Rica* (outkast. (Ymer, Stockholm, 1902, XIII, 19-58.) In this article, with 10 plates and 37 text-figures, the author describes his investigations on the east coast of Costa Rica, near Mercedes. The temple-mound and walls, graves (14 in 3 groups), a find in the wood near the temple-mound, a place for making idols, mortars, etc., at Mercedes, a group of graves at Williamsburg, and other remains at Siquirres, Sta Rosa, Quasimo, and Jimenez are discussed, the first and second with considerable detail and list of objects found. At the foot of the temple-mound and on the river bank at Williamsburg carved stone figures of men and animals were discovered, while at Mercedes there were uncovered a considerable number of basalt idols and fragments,—the place having evidently been a "factory" for such objects. At Williamsburg some rock-carvings were found. Many tripods and clay vessels of various sorts, some axes, and other objects in stone and clay were discovered. The ornamentation figured on pages 46-47 is of interest.

Hawtrej (S. C.) *The Lengua Indians of the Paraguayan Chaco.* (J. Anthr. Inst., Lond., 1901, XXXI, 280-299.) Treats, with 7 plates (figuring natives, houses, dress, pottery-making, games, dances, weapons, vessels and ornaments, musical instruments, etc.), of the location of the Lengua, their physical type, clothing, personal ornaments, painting, tattooing, habitations, weaving, basket-work, string, leather, pottery, dyeing, fire-making, conservatism, writing, "cat's cradle," ornament, food, tobacco, religion, mythology, superstitions, magic and witchcraft, customs, government, music, language, history, archeology, hunting, training of animals, infanticide, burials, numerals and counting, games, feasts and dances, contact with civilized races. The paper is also accompanied by a sketch-map and 4 text-figures. The Lengua are "a nomadic and peaceful tribe,"—by language seemingly cognate with the Tobas, Matacos, etc. The author remarks that "the facial type presents occasional similarity to the North American or even to the Mongolian type," but the "common type" given on plate xxxv is Amer-

indian enough. The neighbors of the Lengua are the Sahin on the west and the Tobas on the southwest, the former more agricultural, the latter more warlike. The data here published were obtained during a residence of four years among the Lengua. Tattooing with the Lengua is confined to the face and is more common among women. Weaving is done by all the women; string from caraguata-fiber is made by both sexes. The Lengua are very clever at cat's cradle. Clay pipes have been driven out since the entrance of the steel knife makes it more economical to have unbreakable ones of wood. The fire-stick is in use. The women still cut wool with knives. A sort of notched-stick "diary" is in vogue. Decorative art centers about pipes and "it is rare to find two pipes identically the same." Milk and mushroom are thought "unfit" for food. A marked fear of *kilydhama*, or spirits, prevails. They have many interesting mythological tales. Beeties, over whom the shamans exert great influence, figure much in the native superstitions and appear in the creation-legend. There is much etiquette in the reception of visitors, and the leave-taking reported on page 291 is worth noting. As to government, "the Lengua natives rule their lives almost entirely by public opinion." The chiefs are rather "fathers of the family." In general the Indians "are a reasoning and reasonable people, if treated as such." They are to us "decidedly unmusical." They still use the bow and arrow largely. Infanticide is still "quite common." The Lengua can count up to 20, using fingers and toes. They have many games and dances,—one of the most characteristic is a sort of race-game with dice, called *shirihua*. Tops and dolls are known. The missionaries among the Lengua are exercising wise discretion in the matter of "reforming" the natives. According to Mr Hawtrej, though good results in the matter of morality, manners, etc., are perceptible, "it is too soon yet to comment definitely on the effect of civilization on the Lengua Indians." This is a valuable paper.

Hearn (L.) *The island and people of Martinique.* (Nat. Geogr. Mag., Wash., 1902, XIII, 214-216.) Treats of houses, dress, etc.

Hill-Tout (C.) Communal houses in British Columbia. (*Amer. Antiq.*, Chicago, 1902, XXIV, 107.) Extract from *Rep. Brit. Assoc.*, 1900, on dwellings of the Sk'q'mic.

— Curious and interesting marriage customs of some of the aboriginal tribes of British Columbia. (*Ibid.*, 85-87.) Brief account of wooing among the Yale and Squamish Indians. In the customs of the latter, now obsolete, a four-days' fast of the lover occurs.

James (G. W.) A Saboba origin-myth. (*J. Amer. Folk-Lore*, Boston, 1902, xv, 36-39.) Told by the oldest male Saboba Indian of southern California, whose portrait is given. Relates how Uuyot, the chief, under the guidance of "Siwash," the god of earth, led the Sabobas over-sea to their home on the coast. Uuyot can still be seen through the waters of the Great Bear Valley lake, where he lies buried.

Jenks (A. E.) The bear-maiden. (*Ibid.*, 33-35.) A tale of the Ojibwa of Wisconsin, with some post-Columbian additions. Taken down in 1899 from an old woman. It is a version of the struggle between the earth (old woman and two daughters) and certain forms of light (little bear-morning star, etc.).

Keane (A. H.) Native American culture: its independent evolution. (*Intern. Mo.*, Burlington, Vt., 1902, v, 338-357.) Reviews recent works of Payne, Selser, Thomas, Tylor, Brinton, Powell, Maudslay, Nuttall, and Dellenbaugh and resums the evidence for the independent development of Amerindian culture of all kinds. Keane believes that America was reached in the Stone age by at least two streams of migration (N. W. Europe, N. E. Asia), but the subsidence of the land-connections then existing left the "Indians" to pursue their way as "an ethnic island." A few primitive devices and ideas they probably brought with them, but "American culture, properly so-called, was locally evolved, and owed absolutely nothing to extraneous influence." Mr Keane seems too much inclined to believe that this view of the matter was developed by himself and others before it was current in America.

Lawson (P. V.) The great serpent mounds at Menasha. (*Wisc. Archeol.*, Milwaukee, 1902, I, 35-36.) Brief description with plan. The mounds represent "two reptiles apparently rushing towards each other." One of them has never been disturbed.

Logan (Margaret A.) The American Cadmus. (*Out West*, Los Angeles, Cal., 1902, XVI, 173-176.) Brief account of Sequo-yah, the inventor of the Cherokee alphabet, and the origin of this system of writing. In the council hall at Tahlequah in the Indian Territory there is a marble bust of Sequo-yah and the botanical name *Sequoia gigantea* of the "redwoods" of California keeps his memory green. He is also remembered in the name of the *Sequoya League*, "to make better Indians," an account of which is given in *Out West*, pages 297-302.

McGee (W. J.) Germes d'industrie de la pierre en Amérique. (*Bull. et Mém. Soc. d'Anth. de Paris*, 1902, 7^e s., III, 82-88.) Treats of the Seri Indians of the Gulf of California as typical of the beginnings of lithiculture. Food, social organization, stone industry, weapons, mentality and physical characteristics, etc., are briefly described.

Mills (W. C.) Excavation of the Adena mound. (*Rec. of Past*, Washington, 1902, I, 131-146.) Detailed account, with 8 plates (28 figs.) and 5 text-figures, of the excavation in the summer of 1901 of the Adena mound near Chillicothe, Ohio, by the author, who is curator of the Ohio State Archeological and Historical Society. Five sections were made, and all changes in the structure of the mound were photographed. The mound seems to have been built at two different periods, and of the 34 skeletons found 21 belonged to the first and 13 to the second. The soil of the first period was nearly all dark-colored sand, that of the second lighter-colored sand mixed with earth. The first period represented the original mound about twenty feet high, the second the other six. In the first period the burials were made in timber graves, in the second no such graves occurred. Other minor differences were also present. With some of the skeletons no implements or ornaments were found. Copper bracelets and rings, beads (of shell and bone), pieces of

Mills—Continued.

coarse cloth, gorgets, spearheads, flint-knives, bone awls, etc., are among the objects taken from the mound. Evidences of cremation occur, also burned mussel-shells and the bones of many animals. The tibia and fibula of one skeleton were painted red. Perhaps the most interesting object discovered at this mound was the effigy pipe figured on pages 147-148. These investigations are of special importance by reason of the care with which they were carried on.

Morice (A. G.) Carriers and Ainos at home. (Amer. Antiq., Chicago, 1902, XXIV, 88-93.) After discussing the etymology of the name "Carriers" (properly "packers"),—due to the custom of the widow "packing" about the charred bones of her late husband,—Father Morice compares the dwellings of the Carriers and the Ainos, their use of the dog, etc. The points of comparison are, however, of a general character. He holds that "in the cremation of the dog among the Carriers there was not the remotest idea of sacrifice." The treatment of dogs as if they were human beings has left its impress upon the language.

Muskat (G.) Ueber eine eigenartige Form des Sitzens bei den sogen. Azteken. (Verh. d. Berl. Ges. f. Anthr., 1902, 33-35.) Describes, with two text-figures, the peculiar fashion of sitting used by the so-called "Aztec dwarfs" (legs outward from knees at nearly right angles, soles, thigh, and backside on floor). This mode of sitting does not appear to be employed by the Aztecs or represented on their monuments, nor is it, so far as is known, in use by idiots. It resembles somewhat the *mimida rei* of Japanese children. The author asks for analogous facts.

Peabody (C.) Explorations in Mississippi. (Amer. J. Archaeol., Norwood, Mass., 1902, vi, 28-29.) Brief account of the opening of two mounds in Comaloma county, and the remains found. The date is uncertain, for, "while part of these mounds are almost necessarily post-Columbian, some time may have elapsed between the beginning and completion of the work." Other smaller mounds formerly surrounded these large ones.

Peet (S. D.) Human figures in American and Oriental art compared. (Amer. Antiq., Chicago, 1902, XXIV, 109-124.) General discussion, with 13 text-figures. The art of the Pueblos, the peoples of Mexico and Central America, the ancient Peruvians, etc., is briefly compared with that of Egypt, Mesopotamia, etc. The author considers that Egyptian civilization did not reach as far as America. Certain features of art "are as peculiar to Central America as are the passive features of Buddha to the Buddhist art, and as are the heavily-bearded figures to the Babylonian art, or the conventional figures to the Egyptian art."

Porter (R. L.) The Cutler mounds at Waukegan. (Wis. Archeol., Milwaukee, 1902, I, 41-42.) Brief note on "three prehistoric mounds, one of them being the largest I know of in southern Wisconsin." Efforts are in progress to have the city acquire them.

Purdy (C.) Pomo Indian baskets. (Out West, Los Angeles, Cal., 1902, XVI, 9-10, 151-158, 262-273.) Second, third, and fourth sections of an interesting and well-illustrated account of the basketry of the Pomos of California. In basketry these Indians "found an outlet for the highest conceptions of art that their race was capable of," and when the first white contact took place, "they had reached a height in basketry which has never been equaled—not only by no other Indian tribe but by no other people of the world in any age." Among the topics treated are: basket materials and technique, weaves (6 are common, 4 soft, 2 hard) and varieties of baskets, designs and ornamentation, uses of baskets (from fish-carriers to cradles), etc. According to Mr. Purdy, no other people but the Pomo adorn their baskets with feathers. By "Pomo" baskets are meant "the baskets of all the 30 or more tribes grouped by Mr. Powers under that name." All the Indian words (names of baskets and materials, technical terms, etc.) are from the dialect of the Bollo Kai Pomo of Potter valley, Mendocino county.

Raynaud (G.) Note sur le déchiffrement des inscriptions précolombiennes de l'Amérique centrale. (Bull. et Mém. Soc. d'Anthr. de Paris, 1901, 5^e s., II, 589-592.) After many years of study,

Raynaud—Continued.

the author claims that he "possesses, with scientific and mathematic certainty, the key to the deciphering of the pre-Columbian inscriptions of Central America." He does not disclose his method but states that it belongs in a way with the decipherment of diplomatic and military cryptograms. After "oiling and opening certain locks" M. Raynaud promises translations of inscriptions and codices.

Robinson (Ednah) Chinese journalism in California. (Out West, Los Angeles, Cal., 1902, XVI, 33-42.) Illustrated general historical account. It requires, we are told, 11,000 spaces to contain a font of Chinese type and a Chinese printer can arrange 4000 characters a day. It takes eight men through a twelve-hour day to set the type for "a modest four-page daily."

Seler (E.) Ein anderes Quauhtzalcuhtli. (Ethnol. Notizbl., Berlin, 1901, III, Hft. 2, 135-139.) Brief account, with 5 text-figures, of a *quauhtzalcuhtli*, or blood-receiver in the Vienna Museum. This specimen differs from the one in Berlin, in having no crown of hearts above the eagle-feathers.

Thompson (A. T.) The stone graves of Tennessee. (Amer. Antiq., Chicago, 1901, XXIII, 411-419.) Largely based on Jones, Thurston, and Putnam. The author details also his own recent examination of some of these remains near Nashville. A shell gorget found in one of the graves is figured on page 417.

Vogt (F.) Material zur Ethnographie und Sprache Guayaki-Indianer. (Ztschr. f. Ethnol., Berlin, 1902, XXXIV, 30-45.) General account, with 3 text-figures (men and children) and text-maps, of the Guayaki Indians of the Sierra de Villa Rica in Paraguay, their history, name and origin, weapons and implements, social life, religious ideas, industry, food, clothing, language (38-45). A vocabulary of de la Hite's obtained in 1896-7 and one by the author taken down in 1901 are compared with the corresponding Guaraní words, and a few observations on the language by Hr Koch are appended. The text of a brief war-song is given on page 43. Father Vogt considers that the number

of Guaraní words in the Guayaki vocabulary suggests relationship with that stock, while Dr Koch thinks the two languages are most closely connected. Family, rather than tribe, is the social nucleus. Their fashion of sleeping is very peculiar. The Guayaki are savages in the etymological sense of the term.

Wilcox (W. D.) Recent explorations in the Canadian Rockies. (Nat. Geogr. Mag., Wash., 1902, XIII, 141-168, 185-199.) Contains (194-195) some notes on the Stony Indians.

Wintemberg (W. J.) Some ceremonial implements from western Ontario, Canada. (Rec. of Past, Washington, 1902, I, 150-156.) Brief descriptions, with 2 plates (23 figs.) of bird-amulets, har-amulets, banner-stones, boat-shaped amulets, gorgets (tablets, pendants), etc., from various sections of western Ontario. In this region, the country of the "Neutral Indians," these objects are found in greatest abundance, and the author is inclined to attribute them to "an earlier and, possibly, non-Iroquoian race," since on the sites of the "Neutral" villages very few of them have been found. Mr Wintemberg notes the resemblance between these amulets and the ivory images of birds used by the Eskimo in playing certain games. The reviewer suggests that if the Eskimo preceded the Indians who made these "amulets," they may be copies of a later date and perhaps for another purpose of Eskimo game-figures. But their use is still unexplained.

Woodhull (A. A.) Eine untersuchung über den Inhalt eines Mound-Schädels. (Verh. d. Berl. Ges. f. Anthr., 1901, 527-533.) Describes, with 5 text-figures, what appears to be the remains of the brains of a mound-builder from the Seloto valley, Ohio. The results of examination, analyses, etc., are given and comparisons made with the remains in the skulls of three Peruvian mummies and Petrie's Naqada "brain."

Zaborowski (S.) Photographies d'Indiens Huichols et Coras. (Bull. et Mém. Soc. d'Anthr. de Paris, 1901, v^e s., II, 612-615.) Brief notice of photographs of Huichol and Cora Indians taken by M. Diguët.

John Wesley Powell

March 24, 1834 - September 23, 1902

Major J. W. Powell, A.M., LL.D., Ph.D., soldier, man of science, administrative, died at Haven, Maine, of arterial sclerosis, at sunset on Tuesday, September 23d.

Born in Mount Morris, New York, John Wesley Powell dwelt in Ohio and Wisconsin with his father's family, and afterward settled in northern Illinois, where he received a collegiate education and entered on a professional scientific career. On the outbreak of the Civil War he enlisted as a private, and was promoted through several grades to that of Lieutenant-Colonel. He left an arm at Shiloh, but remained in the service until the end of the war, when he resumed professional work. In 1867 he took a class into the Rocky Mountain region, thus inaugurating the summer-school system. In 1869 he led a party through the Grand Cañon of the Colorado in one of the most remarkable exploring trips ever made in North America. This exploration grew into the United States Geographical and Geological Survey of the Rocky Mountain Region, of which he was made Director; in 1879 this Survey was merged with three others in the United States Geological Survey, while the ethnologic work of the Powell survey was taken up by the Bureau of Ethnology, created at the same time with Major Powell as Director. In 1880 he became Director also of the United States Geological Survey, which position he filled until 1894; subsequently he devoted himself to ethnologic researches.

Major Powell was prominently connected with many scientific

organizations. He was the leading founder and first President of the Cosmos Club of Washington, in 1878, and of the Anthropological Society of Washington in 1879, and one of the founders of the Archæological Institute of America in the latter year; he was President of the American Association for the Advancement of Science in 1888. At the time of his death he was Director of the Bureau of American Ethnology, a Vice-President of the American Anthropological Association, an editor of the *American Anthropologist*, an editor of *Science*, a trustee of Columbia University, and a member of many executive boards of scientific societies.

A fuller notice of Major Powell's life and work, especially in the field of anthropology, will be presented in a forthcoming number of this journal.

ANTHROPOLOGIC MISCELLANEA

Glacial Man in Kansas.—Two miles southeast of Lansing, Kansas, and about twenty miles northwest of Kansas City, a human skeleton was found last spring by farmers in digging a long tunnel excavation for use as a dairy cellar. Soon after the discovery, the place was visited by M. C. Long and Edwin Butts, of Kansas City, the former being curator of the public museum there, for which they obtained the skeleton. Mr Butts, a civil engineer, made measurements of the excavation, which extends 72 feet into the bluff. Its floor is a nearly level stratum of carboniferous limestone; and its lower part consists of debris of limestone and earth, while its upper part is the fine calcareous silt called loess. The skeleton was found mostly in a disjointed and partly broken and decayed condition, at the distance of 68 to 70 feet from the entrance of the tunnel, about two feet above its floor, and 20 feet below the surface of the ground exactly above it. Half of the lower jaw was found ten feet nearer the entrance, and a foot lower, than the principal parts of the skeleton, including the other half of the lower jaw.

About a month ago this locality was carefully examined again by Mr Long and Prof. S. W. Williston, of the Kansas State University, and the latter wrote a short article, "A Fossil Man in Kansas," which was published in *Science*, August 1. Before this article appeared, newspaper accounts had been seen by Prof. N. H. Winchell, of Minneapolis, and by myself in St Paul, which had led us to plan a journey to Kansas, partly for the purpose of examining the Lansing skeleton and the drift section in which it was discovered. We accordingly visited this tunnel excavation, at the house of Martin Concannon, on Saturday, August 9. Professors S. W. Williston and Erasmus Haworth, of the Kansas State University, and M. C. Long, Sidney J. Hare, and P. A. Sutermeister, of Kansas City, accompanied us. Mr Concannon, owner of the farm, and his sons, who dug the tunnel and found the skeleton, were also present and explained again all the circumstances of their discovery.

The entire section of the tunnel, which is about 10 feet wide, 7 feet high with arched top, and 72 feet long, was examined; additional bones, as of the hands and feet, were found in the dump outside; and the skeleton, in Kansas City, was inspected. According to Professor Williston's measurements of the bones, the fossil man was about five

feet eight inches in stature, and was probably more than fifty years of age, as estimated from the worn condition of the teeth. The skull is dolichocephalic, with receding forehead, strongly developed supra-ciliary ridges, and a markedly prognathous face and chin. Most of the vertebrae and ribs are wanting, probably because of their decay previous to the deep inhumation by the overlying loess.

The skeleton lay in the upper part of the earthy debris, which included many small limestone fragments and some as large as two or three feet in length. Just above it, at an irregular line a few inches to a foot higher, a horizontally stratified water deposit of fine loess begins, forms the upper two thirds of the tunnel, and extends up to the surface 20 feet above the place of the skeleton. The loess continues up to Mr Concannon's house, which is about 100 feet distant, on a slight terrace, about 35 feet above the horizon of the skeleton, and 47 feet above the level reached by the adjoining Missouri river at its highest flood since Mr Concannon's settlement here thirty-five years ago. This flood, in 1881, was 25 feet above the lowest stage of the river, which is 735 feet above the sea. The carboniferous limestone outcrops about 50 feet southeast of the house, and rises gradually in a spur ridge south-eastward to a height of 150 feet or more above the river.

Within a quarter of a mile southward, and also within half a mile to the west and northwest, the loess forms uplands about 200 feet above the Missouri; and at the end of the loess deposition it doubtless stretched as a broad floodplain, 200 or 250 feet above the present river level, across the Missouri valley, which has been subsequently re-excavated. The skeleton appeared to all our party to have been entombed at the beginning of the loess deposition, which would refer it to the Iowan stage of the Glacial period, long after the ice-sheet had receded from Missouri and Kansas, but while it still enveloped northern Iowa and nearly all of Wisconsin and Minnesota. In other words, it belonged to a time before the prominent moraines of these last-named states were formed on the borders of the waning ice-sheet. The very old Kansas glacial drift, including many boulders of the red Sioux quartzite, is very thinly spread on this northeastern part of Kansas, under the loess, and reaches about thirty miles south of Lansing, terminating along an east to west boundary 12 to 15 miles south of the Kansas or Kaw river.

The loess and the Lansing skeleton are of Late Glacial age, but are probably twice or perhaps three times as ancient as the traces of man in his stone implements and quartz chips occurring in glacial gravel and sand beds at Trenton, N. J., and Little Falls, Minn. In the *Somme*

valley and other parts of France, as also in southern England, stone implements in river drift prove that man existed there before the Ice age, that is, probably 100,000 years ago, or doubtless four or five times longer ago than the date of the skeleton at Lansing, Kansas.

WARREN UPHAM.

Guido Boggiani.—Word has been received through the public press of the death, presumably at the hands of the Tobas Indians, of Prof. Guido Boggiani and his party in the Gran Chaco, South America. Professor Boggiani started from Asuncion, Paraguay, early in the present year, with six Indians and a peon, for the purpose of exploring this almost unknown region. Only once after his departure was news received from him, brought by two members of his party who had found their way back. A small party, sent out from Puerto Casado in the hope of gleaning news of Boggiani, returned with the report that he had suffered death. Professor Boggiani was an Italian by birth who had spent several years in studying the aborigines of Paraguay. His beautiful monograph on the Cadinéios Indians, published at Rome, in 1894, under the title *Viaggi d'un artista nell' America Meridionale, 1. Caduwei (Mbaya e Guaycura)*, has been most favorably received.

Rudolph Virchow.—Dr Rudolph Virchow, the distinguished anthropologist and statesman, died in Berlin on September 5, in the eighty-first year of his age, and was buried with public honors in the same city on Tuesday, September 9. There were present members of the German cabinet, distinguished city officials, officers and professors of universities, and leading men in the scientific societies of Berlin and other cities. It is difficult to dissociate his scientific work from his public services. He stood in the same relation to anthropology in Germany as did Major J. W. Powell in America, enriching every branch of science by his own researches, but at the same time fighting the battle of science in the legislature. It is hard to say in which capacity he did his country and our special study the greater favor. Dr Franz Boas, who was personally acquainted with Dr Virchow, publishes in *Science* for September 19 an extended account of his work, from which the following extracts are taken.

"In Rudolph Virchow science has lost one of its great leaders, Germany one of her great citizens, the world one of its great men. For sixty years Virchow has devoted his strong mind and his indefatigable energies to advancing the work of mankind. Medicine, anatomy, pathology, and anthropology count him as one of their great men. For long years he has been a power in German political life, always upholding the cause of personal freedom.

"The beginnings of his anthropological work almost coincide with

those of modern physical anthropology in Germany. Among the men who laid the foundation of this science no other one has done more to shape, guide, and foster it than Rudolph Virchow. His interest in anthropology, which was destined to impress his personality upon the young science, developed during the time when he investigated the causes of cretinism and the conditions determining the growth of the skull. The similarities between pathological forms of the skull and those found among different races of man probably led him to researches on the variations of form in the human body. The impetus which he gave particularly to physical anthropology and to prehistoric archeology, was so great that the development of these two branches of science in Germany may be said to center in Virchow's activity.

"Through his eminent faculty for organization, he advanced the whole field of anthropology. He took a leading part in the formation of the German Anthropological Society, of the *Berliner Gesellschaft für Anthropologie, Ethnologie, und Urgeschichte*, and in the establishment of the monumental *Archiv für Anthropologie*. The two societies soon became the centers of anthropological activity in Germany. The first named devoted its energies to the study of the physical characteristics and of the earliest history of the Germans. Under Virchow's lead this society undertook to collect statistics relating to the distribution of the color of skin, eyes, and hair in Germany, and observations were recorded in all the public schools of the country. The results of this extended inquiry, which include a cartographic representation of the distribution of types in the empire and a discussion of their probable history, were published by Virchow.

"The *Berliner Gesellschaft für Anthropologie, Ethnologie, und Urgeschichte* soon became a center to which poured a flood of anthropological material from all parts of the world, and where important scientific questions were discussed. Through its intimate relations with German travelers the society became of valuable assistance in the development of the Berlin Ethnographical Museum. Owing to Virchow's influence the society gradually acquired a large and valuable collection of human crania and skeletons. Among the subjects discussed before the society European archeology always held a prominent place, and Virchow took a lively part in this work which has contributed much to the growth of the prehistoric collections in Berlin.

"As director of the Pathological Institute and Museum of the University of Berlin, Virchow had further opportunities to advance our knowledge of the anatomy of races, and he accumulated much valuable anthropological material in this Institute. His studies of prehistoric archeology brought him also into close contact with students of folklore, and he became one of the founders of the *Museum für Volkstrachten*.

"It will thus be seen that Virchow took the leading part in the organization of anthropological work in Germany. Therefore it is no wonder that his views have wielded a far-reaching influence, so much so, that without a knowledge of them the peculiarity of German physical anthropology and of German prehistoric archeology can hardly be understood.

"Most important is his attitude toward the theories relating to the descent of man. His views regarding this question were determined by his fundamental researches on the functions of the cell in the animal organism. He formulated his views in the words that every cell is derived from another cell. No matter how much the forms of the cells may vary, every new form is derived from a previous form. Cells, in the course of their lives, may change their forms according to age and according to the influences to which they are subjected. Such changes take place both in the healthy and in the diseased organism, and often it is impossible to draw a sharp line between normal or physiological, and abnormal or pathological, changes. Virchow himself expresses these views in the words that in reality there is no distinct line of demarcation between physiological and pathological processes, that the latter are only physiological processes which take place under adverse conditions. The cell which changes its form during its lifetime may, therefore, be said to be variable; or, in Virchow's words, it possesses mutability.

"We cannot, in the scope of these notes, enter upon Virchow's numerous investigations bearing upon the anatomy of the races of man. Many of them contain discussions of general principles. His researches on the physical anthropology of the Germans and his description of American crania may be mentioned as specially important.

"His investigation of the anatomical characteristics of the Germans led him naturally to studies in prehistoric archeology to which he devoted much of his time and energies. For a long time forms of the body were considered a characteristic of nationalities. Forms of skulls were described as Teutonic and Slavic; there were Turanian and many other kinds of skulls. Nobody has done more than Virchow to show that this view is untenable. Virchow has always maintained that the limits of human types do not coincide with the dividing lines of cultures and languages. People who belong to the same type may speak different languages and possess different forms of culture; and on the other hand—as is the case in Germany—different types of man may be combined to form one nation.

"These phenomena are intimately connected with the intricate migrations of the races of Europe; with the invasions of southern Europe by Teutonic peoples and the development of north European culture under the influence of the cultures of the eastern part of the Mediterranean sea. The gradual introduction of metals and the disappearance of the culture of the Stone age is one of the phenomena that are of great assistance in clearing up the relations between the ancient inhabitants of Europe. The change of culture indicated by the introduction of bronze indicates that the new culture arose in the far East. This is the reason which induced Virchow to undertake extensive prehistoric studies in Asia Minor and in the region of the Caucasus. His studies in prehistoric archeology, which apparently are so remote from his original anatomical work, are in reality closely connected with his researches on the early history of the races of Europe. Anatomical data alone cannot solve these intricate problems, and Virchow's extensive activity in the field of prehistoric archeology is another proof

of his thorough and comprehensive method which utilizes all the available avenues toward the solution of a scientific problem.

"Physical anthropology and prehistoric archeology in Germany have become what they are largely through Virchow's influence and activity. His method, views, and ideas have been and are the leading ones. His greatness as a scientist is due to the rare combination of a critical judgment of greatest clearness and thoroughness with encyclopedic knowledge and a genius for grasping the causal relation of phenomena."

Dr Virchow's eightieth birthday occurred on the 13th of October, 1901. A festival was held in his honor and distinguished men of science prepared each an address in which the distinguished scholar's contribution to his division of science was set forth. Dr A. Lissauer's paper entitled "Virchow as an Anthropologist" will be found in the *Deutsche Medizinische Wochenschrift*, 1901, No. 41.

Dr Virchow's published contributions to anthropology, large and small, amount to over one thousand.

O. T. MASON.

Japanese Linguistic Commission.—*The Dial* for September 1st says:—"We are indebted to a correspondent in Japan, Mr E. W. Clement, for the following interesting paragraph: 'It is generally supposed that languages, like poets, are "born, not made"; and that the changes in a language come, not artificially, but naturally. But we are now treated to the spectacle of an attempt to effect a tremendous reform in a language, many centuries old, by legislative enactment. And the nation which is making this apparently foolish and useless attempt is Japan, which has already often startled the world by its marvellous reforms. And if its wonderful success in legislative reforms in other lines is any criterion in this case, it will succeed in effecting much-needed reform in its language. At the last session of the Imperial Diet of Japan, a sum of money was appropriated for a "linguistic commission." This was appointed in the spring of this year, has held several meetings, and has already arrived at some decisions. It has been decided, for instance, that "a phonographic script" is to be employed; but the much-discussed question, whether it shall be the common Japanese *kana* (syllabic characters) or Roman letters is still on the docket. It is also proposed to reduce the number of Chinese ideographs in common use. Moreover, the differences between the written and the spoken language are to be abolished; and the formal epistolary style is to be reformed. It has also been decided that the whole system of Japanese etymology must be "carefully revised." Even the "problem of local dialects" is to be attacked, and "a standard dialect fixed." It is noticeable that the commission is not afflicted with

trepidity, but is proceeding with the utmost courage to attack the most difficult problems. It is composed of some of the most practical, as well as the most scholarly, men of the Empire; and its work will be watched with the deepest interest, both at home and abroad. And the great changes already effected in the Japanese language since the country was opened are some warrant for believing that this commission will achieve a measure of success."

Esthonians of Krasnyj.—O. Kallas, who visited the Esthonians of Krasnyj in the government of Pleskau during the summer of 1901, under the auspices of the Society for Finnish Literature of Helsingfors, has made a brief report of his work in the *Annalen der Finnisch-Ugrischen Forschungen* (1902, II, 54). In the Krasnyj district are thirty-five villages in which dwell some 2,000 Esthonians of the Greek-Catholic faith. The first settlement was founded some two hundred and fifty years ago by immigrants from the country about the cloister of Petschur. These people are of considerable interest to the anthropologist and the folklorist by reason of the Russification which they are fast undergoing. Only in eleven villages can a few older individuals be found who are able to speak (imperfectly even, in most cases) their original mother tongue, and a single generation more may see the last of this knowledge disappear. Of folktales, *märchen*, and riddles not much remains. More of old religious ideas and heathen usages seems to have survived, particularly sacrifices and offerings to the dead. The aged persons, who knew and worshiped them in their youth, mourn the passing of the "old gods" before "the Russian gods." Some of the villages bear double names, one Russian, the other Esthonian. Hedged off in a corner of the garden may still be seen what remains of the old heathen "altar," where the *kahi* or offering-ceremony was enacted.

A. F. CHAMBERLAIN.

British Academy.—*The Popular Science Monthly* for April describes the proposed British Academy for the promotion of historical, philological, and philosophical studies, and calls attention to the fact that our National Academy of Sciences was intended to include students of these sciences, but the few representatives have died and no successors have been elected. It seems likely that unless the National Academy decides to give recognition to sciences other than those commonly called natural and exact, the conditions that prompted the establishment in England of a special Academy may lead to a similar undertaking in the United States. The national societies devoted to history, economics, philology, archeology, and the like, fill most of the important functions that were formerly exercised by a national academy, but there

appears to be as much reason for the students of these sciences to unite in a national academy as there is in the case of the natural sciences. There seems also reason to suppose that the societies referred to will form some basis of coöperation as the natural sciences have done by uniting in the American Association. Whether all the sciences should unite in one national academy and in one national association or whether they should divide into two separate groups is certainly a question of considerable importance.

Dr Noël Ballay, whose death was announced early in the year, held many positions under the French government in West Africa, being in 1886 lieutenant-governor of the Gaboon, and later governor of French Guinea. Through him the Museum and the Musée d'Ethnographie received many valuable specimens (skeletons of anthropoids, crania of negroes, etc.), besides the many objects found in the cave of Kakimbu. Dr Ballay was an administrator who took a profound interest in anthropology. These facts are taken from a brief necrological note in *L'Anthropologie*, 1902, XIII, 134, from the pen of R. Verneau.

Library Courtesies.—A noteworthy instance of the courtesy of one institution to another is recalled by the Duc de Loubat's publication last year of the *Codex Féjéredy-Mayer*, an ancient Mexican manuscript, which has been reviewed in these pages. The original, in the Liverpool Free Public Museums, was lent to the Bibliothèque Nationale of Paris in order that the facsimile might be made.

Austronesian.—This term, formed in analogy with divers others in use with reference to the "island world" of the Pacific and its various sections, is employed by Father W. Schmidt, in a recent article on the relationship of the languages of New Guinea, published in the *Zeitschrift für afrikanische, ozeanische und ostasiatische Sprachen* (Berlin) for 1902, to designate the extensive linguistic stock comprising the Indonesian, the Melanesian, and the Polynesian tongues, but excluding, in all probability, the Papuan languages, which seem to stand apart from this stock.

A. E. C.

Madagascar Academy.—The *Internationales Centralblatt für Anthropologie* states that at Antananarivo there has been established, in imitation of the Académie Française, a "Madagascar Academy." Among its chief objects are the ethnography of Madagascar, archaeological investigations, the collection of old manuscripts, and especially the study of the native dialects. Besides Frenchmen the Academy includes among its members the native investigators Rabesihanaka, Randriamifity, and Andriamanantsity. This recognition of the genius

of the Malagasy is a credit to the French authorities in the great African island and might well be imitated elsewhere. A. F. C.

Finno-Ugrian Ethnographical Atlas.—At a meeting of the Finno-Ugrian Society on February 12, 1902, Professor Setälä proposed the preparation of an atlas (with explanatory text) of the present habitats of the Finno-Ugrian peoples. This work could be accomplished only by the joint efforts of capable investigators in the various countries concerned. The society approved of the project and recommended all investigators in the field under its auspices to collect material to this end.

A. F. C.

DR LEHMANN NITSCHÉ, of La Plata, the South American archeologist, has been made an *Officier d'Académie* by the French government.

DR ANTOINE-ÉDOUARD FOLEY, who died at Andresy, October 25, 1901, aged 80, was from 1875 to 1888 a prominent member of the *Société d'Anthropologie de Paris*. He was one of the thirteen executors of the will of Auguste Comte.

ANNOUNCEMENT is made by The University of Chicago Press of the appearance of another preprint from The University of Chicago Decennial Publications, the document just ready being *Physical Characters of Indians of Southern Mexico* (75c., net) by Prof. Frederick Starr. This series was planned in connection with the celebration of the completion of the first ten years of the corporate existence of the University, the purpose being to set forth and exemplify the material and intellectual growth of the Institution during the first decade. The series, which is in an advanced stage of preparation, will consist of ten regular volumes issued in quarto form and about fifteen supplementary volumes in octavo form.

THE QUIVIRA HISTORICAL SOCIETY, "an association of explorers, authors, and ethnologic students," unveiled on August 12th, a granite obelisk at Logan Grove, near Junction City, Kansas, to commemorate the discovery by Francisco Vasquez Coronado, in 1541, of the early Wichita Indian country in Kansas, known as the Province of Quivira, and of the identification of the country a few years ago with the original province.

ANDRÉ SANSON, honorary professor in l'École Nationale de Grignon and in l'Institut National Agronomique, also vice-president of l'Association pour l'Enseignement des Sciences Anthropologiques and a delegate from the *Société d'Anthropologie de Paris* to the administrative committee of l'École d'Anthropologie, died at Saint-Palais, near Royan, France, on August 28th.

AN OFFICIAL CHAIR of anthropology has been founded at l'École des Sciences Sociales de Bruxelles, which is attached to the University, and Dr Émile Houzé has been selected to occupy it. Dr Houzé is president of the Société d'Anthropologie de Bruxelles, and since 1884 has conducted, as a fellow of the University, its course in anthropology. A laboratory and a small museum have been established in connection with the chair.

MR HENRY LING ROTH has been granted a civil pension of seventy pounds in recognition of his services to anthropology. Mr Roth is joint author with Andrew Lang of *The Natives of Sarawak and British North Borneo* (2 vols., New York, 1896); he wrote also *A Sketch of the Agriculture and Peasantry of Eastern Russia* and a *Bibliography and Cartography of Hispaniola* (London, n. d.).

A PORTFOLIO of twenty water-colors depicting Indian life by the late Col. Julian Scott, of Plainfield, New Jersey, has been purchased by the American Museum of Natural History. The pictures were painted from life while Colonel Scott was in Arizona and New Mexico in 1890 gathering material for the report on Indians published by the Eleventh Census.

THE UNITED STATES NATIONAL MUSEUM has recently published "Instructions to Collectors of Historical and Anthropological Specimens," by W. H. Holmes and Otis T. Mason, of its department of anthropology. The bulletin is "especially designed for collectors in the insular possessions of the United States," and may be had on request.

NORDENSKIÖLD.—The second number for 1902 of *Ymer*, the organ of the Svenska Sällskapet for Antropologi och Geografi, is dedicated to Nordenskiöld, the great Scandinavian explorer and man of science. The issue consists of a sketch of his life, accounts of his activities as explorer, geographer, cartographer, geologist, mineralogist, etc.

ARSÈNE DUMONT.—The death of Arsène Dumont, in Paris, has been announced. M. Dumont was author of *Dépopulation et Civilisation*, *Natalité et Démocratie*, and *La Morale Basée sur la Démographie*, besides many contributions to scientific periodicals on general anthropology, archeology, and sociology.

DR EDMUND VON FELLEBERG, conservator of the ethnologic and prehistoric division of the Museum in Bern, died there on the tenth of May, aged sixty-four years. Dr von Fellenberg was widely known as an anthropologist, and in personal intercourse was esteemed a man of extraordinary amiability of character.

A HESSIAN FOLKLORE ASSOCIATION, with headquarters at Giessen, has been established recently. As the first publication of the Society an imposing volume, *Hessische Blätter für Volkskunde*, containing contributions by Usner, Dieterich, Drews, and Strack, has been issued under the editorship of Adolf Strack.

BY A DECISION of June 20th last, the Queen of Holland nominated Dr J. D. E. Schmeltz, Director of the Royal Ethnographical Museum at Leiden, as the delegate of the Netherlands to the International Congress of Americanists, to be held in New York, October 20 to 25.

PROF. D. J. CUNNINGHAM, F.R.S., will give before the Anthropological Institute of Great Britain and Ireland the third annual Huxley memorial lecture on October 21, his subject being "Right-handedness and Left-brainedness."

DR J. HEIERLI, Docent in Prehistory in the University of Zürich, has been given by the philosophical faculty of that institution the honorary degree of doctor in recognition of his investigations in the prehistoric archeology of Switzerland.

ANTHROPOLOGY AT SWEDISH UNIVERSITIES, ETC. (1902).—At Upsala, O. Almgren will lecture twice a week on "Prehistoric Cultures of Europe." At the National Museum, Stockholm, Prof. O. Montelius will lecture once a week on "Life in Sweden in Heathen Times."

OTTO HELM, Ph.D., died at Danzig, on March 24th last, aged 76 years. He was widely known through his chemical investigations of prehistoric bronzes, on account of which he was awarded an honorary doctorate by the University of Königsberg.

THE IMPERIAL ARCHEOLOGICAL COMMISSION at St Petersburg has been issuing a new periodical in addition to its *Annual Report* and the *Materials for the Archeology of Russia*, of which latter twenty-five volumes have appeared.

PROF. DR E. BÄLZ celebrated at Tokio, Japan, on November 22d last, his twenty-fifth anniversary as instructor in the University of Tokio. Dr Bälz has relinquished his docentship and will devote some years to anthropological study in the islands of eastern Asia.

DR JOHANN JANKO, director of the ethnographic division of the National Museum at Budapest, died on July 28, aged 35 years. Dr Janko was the ethnographer of the expedition of Count Zichy.

THROUGH THE GENEROSITY of Mr Abraham Abraham, of Brooklyn, Cornell University has acquired the Egyptological and Assyriological library of the late Prof. August Eisenlohr of Heidelberg.

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THE FOLKLORE OF NORTHEASTERN ASIA, AS COMPARED WITH THAT OF NORTHWEST- ERN AMERICA

By WALDEMAR BOGORAS

(Published under the auspices of the New York Academy of Sciences)

INTRODUCTION

The material for the following remarks has been drawn from about five hundred tales collected among the tribes of northeastern Siberia. The chief part of them belongs to the Reindeer and Maritime Chukchee, a hundred and sixty-eight of which were published by the Imperial Academy of Sciences in St Petersburg¹; others are derived from the Kamchadale, Koryak, Kerek, Lamut, Russianized Yukaghir of the Kolyma, Chuvantzy, Russianized natives of the Anadyr, and Asiatic Eskimo.² The greater part of

¹ *Materials for the Study of the Chukches Language and Folklore, collected in the Kolyma District, St Petersburg, 1900.*

² All tales the provenience of which is not indicated belong to the Chukchee; in the case of the others the tribe is indicated. All the Asiatic tribes above mentioned are called West Bering tribes, in distinction from the East Bering Eskimo and Indian tribes of the American shore.

In the transcription of native names, besides the characters usually employed for this purpose, \tilde{x} is used to designate the sound of the English *ch*; \tilde{g} and \tilde{r} are velar sounds; \tilde{r} has a slight dental sound preceding it.

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the Chukchee and some of the Yukaghir tales were recorded on my first expedition to northeastern Siberia; while all the rest were collected on an expedition which formed part of the Jesup North Pacific Expedition of the American Museum of Natural History in New York. The Koryak material is deficient, however, and we may expect much more to be brought out by Mr Waldemar Jochelson, who studied this tribe for the Jesup North Pacific Expedition.

The Kamchadale material, though the most important, is very scanty. The Kamchadale have forgotten almost all of their old traditions, and consider even the very name of Kutq shameful, and unbecoming to good Christians.

On the contrary, the material collected among the Russianized natives in the Kolyma on my first expedition, and later on in Anadyr and even in Kamchatka, is very remarkable, and includes some of the most curious tales and some of the oldest versions of other well-known tales. Although these people have lost their language, they obstinately cling to the remnants of their old traditions, blending them often with Russian elements, but more often keeping them in the unmutated condition that they had before the coming of the Russians. These Russianized natives, moreover, have rescued from oblivion a large body of old Russian folklore, songs, tales, and epics, long ago forgotten by their neighbors of Russian blood; and so, in some very remote corner of that remote region, one may sometimes hear from the lips of a full-blooded Yukaghir or Yakut an epic song composed on the shores of the Dnieper in South Russia hundreds of years ago. All the sounds and words are preserved almost without distortion, though the meaning of the sentences remains quite obscure to the simple fisherman, who has never in his life seen a single rye-ear or fruit-tree, a town or village of more than thirty houses, kings or glorious knights on goodly horses with glistening armor, of all of which the old epics continually treat in detail.

I.—GENERAL CHARACTER OF THE FOLKLORE

General Characteristics and Affinities.—The mythology and folklore of northeastern Asia are essentially different from the Uralo-Altaic mythology, and point to a group of conceptions and a mode of expression which have little relationship to those of the interior of Siberia; on the contrary, they possess affinities eastward along the shores of Bering sea to the northwestern part of America. The differences of both mythological cycles are so distinct and important that one may almost assume that, from an ethnographical point of view, the line dividing Asia and America lies far southwestward of Bering strait, extending from the lower part of Kolyma river to Gishiga bay. In the whole country east of this line, American ideas, or, more properly speaking, ideas characteristic of the North Pacific coast of America, prevail.

The demons and the creatures of fancy in general have completely different forms. Instead of one-eyed and one-legged spirits, breathing forth fire, riding on six-legged, four-winged iron steeds, and wrestling with similarly mounted knights clad in metal or altogether metallic, there appear monsters of maritime origin,—"sea were-wolves" (*i'ĀEpłłkīt*), which in summer swim about in the shape of killer-whales, but in winter come ashore and transform themselves into wolves; giant polar bears (*kołdtko*) with huge paws, and bodies of solid ivory; shaman-whales; salmon-men; giant islanders; cannibal spirits from across the sea; etc.

Skin boats, vying in swiftness with the flight of the birds; self-moving canoes covered with lids, like snuff-boxes; adventurers traveling along distant shores and among the islands, and meeting with strange and unseemly peoples,—a tribe of shadows that live in a forest, men split in halves, dwarfs, polar bears with human faces,—all these are motives frequently occurring even in the tales of the Reindeer tribes, especially among the Chukchee, with whom extensive reindeer-breeding is of comparatively recent date, and who, even up to the time of the advent of the Russians,

were a half-maritime tribe, with few reindeer herds, living largely on sea meat (*anqdtal*). There are reasons for assuming that in former times this mode of life prevailed among all small Reindeer bands along the Pacific coast, from northern Kamchatka to East cape. The general character of these tales of northeastern Asia, the descriptions of heroes and the expression of their feelings, closely resemble the tales of northwestern America, partly, no doubt, because of similar surroundings, and partly because of a similar degree of culture, which was attained by all Bering Sea tribes, including the whaling and seal-hunting Eskimo and the Maritime Chukchee, the fishing Indian of the North Pacific and the Kamchadale, the reindeer-breeding Koryak and Chukchee, and even the poorest of all—the starving and vanishing Yukaghir. The tales of these rude and primitive people cannot be so rich in epithets and so elaborate in description as are generally the productions of the Mongol or the Yakut, among whom society is more complex, owing to their pastoral mode of life, their larger social units, and more developed class distinctions. Northern folklore, sprung from a simpler mode of life, deals in plain words and progresses directly to its purpose, sometimes giving to the narrative a very vivid and realistic character.

The second striking feature of the folklore of both shores of Bering sea and of the adjoining parts of the Northwest coast of America are the numerous lewd and ribald stories, sometimes independent, sometimes episodes of longer stories, often without any apparent coherence with these. It is truly remarkable that even in this class of stories similar ones are quite frequently found on the east and the west coasts of Bering sea. On account of their very incongruity they arrest the attention and suggest a common source; and as we go farther to the south, along the Pacific coast of Asia, the folklore of the Ainu, with its simple method of description, its numerous animal stories and obscene episodes, must be classed within the same group of ideas.

Before taking up a comparison of Asiatic and American folk-

lore in detail, I shall try to give a sketch of Chukchee folklore, which is most fully represented in my collection. As to the stories of other tribes, though often even more important than those of the Chukchee, they are too disconnected to be treated in a similar way; but their proper significance will be pointed out in the further exposition of the subject.

There is very little difference between the tales of the Reindeer and the Maritime Chukchee, or between those of the Arctic and Pacific branches, since there is a lively intercourse between all sections of the Chukchee tribe.

Chukchee story-tellers usually class their stories in three distinct groups, as follows:

1. "Tidings from the time of first creation" (*tot-témwa-tágnat-kén piñilté*). To this term is often added "and still before that" (*pdnéna-a'ttóol*). Here belong—

(a) Cosmogonic tales about the creation of the world, the sun, the moon, the stars, man, reindeer, the multiplying of the human race, etc.

(b) Miscellaneous information about the number of worlds, the character of deities, constellations, etc. [gathered outside the limits of the stories proper, from several persons].

2. Genuine tales (*lit-lá' mñilté*). These comprise various stories about the relations between human creatures and supernatural beings called *kélet* (plural of *kélé*); stories about the adventures of shamans; various other tales, some containing very realistic descriptions of every-day life, without any trace of the imaginative element. Animal tales and fables are usually classed with this group, though many of them have separate names, uniformly derived from the animal of which they are treating; for instance, "raven tale" (*vdíva-lá' mñilté*), "hare tale" (*mélóta-lá' mñilté*), etc.

3. "Hostile tidings" (*a'qälilérkin piñilté*), comprising stories of wars with various neighboring tribes, chiefly with *Táññit* and *Aiváuat*.

Táññit is the common name for the reindeer Koryak, Chu-

vantzy, and Russians. More strictly speaking, the reindeer Koryak are called *Lîé-tâhûit* ("Genuine *Tâhûit*"); the Chuvantzy, *Âtal-tâhûit*; and the Russians, *M'li-tâhûit* ("Fire-tool *Tâhûit*") or *M'li-t-tâhûit* ("Fire-lock *Tâhûit*"). The origin of the word *tâhûit* is unknown, but it is curious that the Koryak use it in just the same combinations for the Reindeer Chukchee, Chuvantzy, and Russians.

Aivdnat signifies "Eskimo," both Asiatic and American, though the Reindeer Chukchee often designate by this name any maritime people who have no herds and live on seals.

The reason for the distinctions between these groups of tales is founded on the belief that they happened in different periods. The first group is considered to be anterior to all others, and to have come "from the limit (of the time) of the first creation" (*tot-tâmwa-idgnépu*). The second group comes "from the limits of story-time" (*tâ'mâit-idgnépu*). The third group comes "from the limit of the quarreling-time" (*â'qalit-idgnépu*), which is considered to be quite recent.

Supernatural Beings.—By the name *kêlê* the Chukchee designate three different classes of beings more or less akin to each other. The first class are evil spirits who walk invisibly along the earth, producing diseases and preying on the human soul and body. These spirits are always described as a tribe of beings living very much like tribes of men; they reside in villages or camps, travel with reindeer and dogs, marry, have children, need food, and obtain it by hunting man with harpoons and nets. Human souls are like fish or seals to them. They are very dangerous, but at the same time are not immune from attack by mortal shamans, who can kill them just as easily as they kill men. They usually come from the confines of the land occupied by the Chukchee. For instance, the *kêlet* of various diseases come mostly from the west, out of the country of the Big Sun-chief,¹

¹ The Chukchee, like many other native tribes of Siberia, designate by this name the Russian Emperor.

or from a world of their own above or below our earth. In stories from the Pacific coast these *kélet* are often called *rekkeñ*, but in inland and Arctic tales the *rekkeñ* are bear-monsters attached to the entrance of a man-eating *kélet's* house. They have very large ears, so that they can readily hear the slightest noise, and will catch even a mosquito if it attempts to enter unawares.

The second class of *kélet* are earthly tribes hostile to the Chukchee, and more or less fabulous. Some of them lived in Chukchee-land in ancient times; others still live on distant shores. All these *kélet* live by seal-hunting, are always poor and hungry, have no reindeer-sledges, and for the most part even no dog-sledges, but only a single dog for hunting purposes. In one tale it is mentioned that the *kélet* had to fetch wood, pulling the sledge himself. They are all, moreover, cannibals. It is easy to see that there is no strict dividing-line between these two classes of *kélet*. One tale even relates how Chukchee warriors fought with the maritime *kélet* tribe; and how the latter, after several defeats, were forced to leave the shore and henceforth became invisible.

The third class of *kélet* are the spirits that come at the call of the shamans and help them in their magical proceedings. They come singly, though they also live in tribes and villages. They are mostly material objects—animals, such as wolves, reindeer, walrus, whales; plants, icebergs, winds; and even household utensils, as pots, hammers, needle-cases and needles,—and even the chamber-pot and excrement. They closely resemble some of the *inuua* or owners of the Eskimo. These *kélet* are often called "separate spirits" (*ydn̄a-kdlat*), because they talk, when obeying a call, with separate voices (of a ventriloquistic kind).

In the cosmogonical statements of the Chukchee shamans,—so-called *en̄ñllne l̄o'o* ("things seen by a shaman"),—this sort of *kélet* is characterized in the following manner:

In the steep bank of a river there lives a man. A voice is there, and speaks aloud. I saw the "master of the voice," and spoke with him.

He subjected himself to me and sacrificed to me. He came yesterday and answered my questions. The small gray bird with the blue breast sings shaman-songs in the hollow of the bough, calls the spirits, and practises shamanism. The woodpecker strikes his drum on the tree with his drumming nose. Under the axe the tree trembles and wails like a drum under the beating-stick. All these come at my call.

All that exists, lives. The lamp walks around. The walls of the house have voices of their own. Even the chamber-pot has a separate land and house. The skins sleeping in the bags talk at night. The antlers lying on the tombs arise at night and walk in procession around the mound, while the deceased rise and visit the living.¹

In another statement of a similar kind the small bird is practising in the hollow of the bough on a drum of grass. His sacrifice is small beetles or worms, the best of his food. But the thieving raven, alighting on the top of the tree, listens to his songs and takes possession of them by drawing them in with his breath.

The same shaman from whom I obtained this statement told me of the first class of *kellet*: "We are surrounded by enemies — spirits always walking about with gaping mouths. We are always cringing, distributing gifts on all sides, asking protection of one, giving ransom to another, and unable to obtain anything whatsoever gratuitously."

Several tales give detailed descriptions of the relations between human beings and the disease-bringing *kellet*. I will cite one instance:

Two shamans, Teñkukūñe and Rogowāle, lived in a village which was once visited by *rikheñ* people, who came to kill the inhabitants.² One evening the mortals laughed among themselves. Now, the two were powerful shamans, especially Rogowāle. He listened in the dark, and said: "Don't laugh any more. Strange ears are listening to you. Well, I shall go and see who it is." He departed, and found the camp of the *rikheñ*. They were pitching their tents close by. Then he returned to Teñkukūñe. The people meanwhile laughed on. Rogowāle called Teñkukūñe by name. The latter asked: "Halloo!

¹ *Chukchee Materials*, p. 375.

² See page 593.

What is the matter?" Rogowák retorted: "Do you know what is going to happen?"—"What?"—"Ho! They want to kill us!" Teñkukúñe went out too, and Rogowák said: "Let us go and visit them." They put on their shaman dresses and went to the hostile camp. An old *kók* shaman was there, reclining on a sledge. They stopped in front of him, but he could not see them. After a while the old man said: "Make haste with the tents. We want to go for food in that direction." The two stood still and listened. Again the old man said: "Where are the young men? Halloo, there! Bring me my divining-stone!" But what they really brought him was a human skull. He began to swing it, two shamans watching him all the time. "The food is close by. Let the people go in search of it." Meanwhile he tried to move the skull with his staff, but it remained motionless. "Ho! What is the matter with the skull? Why does it not stir? What is the trouble, that we cannot learn anything about our food?" Rogowák raised his stick at the old man, who said: "Oh! It hurts me!" though Rogowák did not strike him. In a moment the old man was nearly dead. The two shamans talked to each other. "Let us exterminate them!" One of them, before leaving home, had promised his protecting spirit his best dog; the other had forgotten to make a promise. They began to strike with their sticks at the *rekkeñ* people. The latter, in great disorder, fled in every direction, and were quite defenceless, because man and spirit are equally dangerous to each other. Even the ground softened under their trampling feet, and the *rekkeñ* fled underground. The shamans, too, nearly disappeared in the earth; and Teñkukúñe, who had omitted the promise of a gift, stuck there up to his middle as if solidly frozen to the ground, nor could he by any means extricate himself. "Why can't you move?" asked his companion. "Are you not a shaman? Probably you went off without making a promise."—"Oh, I forgot it!" gasped Teñkukúñe.—"Hm! How very strange! Try an incantation."—"I cannot."—"Try again, and call to your guardian spirit." Still he was unable to do so. He said: "Look here! Will you help me? I shall reward you."—"Well, tell me your offer beforehand."—"I will give you a double garment, a line of ground-seal skin, and a white dog." Then Rogowák began his incantations, and in a few moments there came a herd of walrus, diving under the frozen earth as they would under water. "They are coming to you!" said Rogowák. "Try and see if you can move your limbs a little." The walruses popped out close at hand, snorting and bellowing. Then they plunged under him again, and with a sudden jerk he succeeded in reaching the surface.

After a long while the *rekkeñ* people came back to the village to seek

revenge. They cautiously crept up to it at midnight, and, putting their nets across the entrance of the tent, began to poke with long poles under the tent-skirts, intending to drive out the little souls of the sleeping men from the protecting cover of the inner room. The people were saved through the watchfulness of a certain peculiar dog received from other spirits as a special gift [in another version as a ransom].

In another tale of similar content the *rekken* try to enter a house in the dark: but the owner, warned in time by a human skeleton from near by, draws a circular line around his house with reindeer blood. In due time the *rekken* come, finding a river of blood encompassing the house. They search for a ford, but cannot reach ground anywhere, even with their long staffs. Finally they desist from their purpose and leave.

In still another tale two *kellet*, trying to attack a human village, are called by the names of diseases, — Cough (*Teggä*) and Rheum (*Pitt*). They are caught by the villagers and severely punished. When caught by men, *kellet* often accuse certain shamans and revengeful people of having sent them. The names of other disease-*kellet* are Colic (*Égríp*); Nightmare (*Suimetun*), who is said to have a black face and to strangle men at night, drinking the blood from their throats; Epilepsy (*Itéyun*), who lives underground, and strikes men sleeping alone in the tundra; Syphilis (*Étet*), small red people moving around with small red reindeer-herds and hiding in cloudberry fruits. When coming to human villages they make their camps on human bodies.

All kinds of *kellet* are believed to be small, — not larger than a finger, — though when appearing to us, they assume any size they please. Several shamans have told me that the size of the *kellet* is very puzzling. They are so changeable that, when seen at the same time by several men, they will appear to them of different sizes. Animals when assuming human form also change their sizes. The ermine, for instance, becomes a stately warrior clad in white fur; and the owl, also a warrior. The legs of mice which they have killed become large reindeer hams.

The stories about the *kéle* tribes living in distant fabulous countries will be referred to later on, in comparison with similar Eskimo tales.

Besides the *kélet*, several other monsters are met with in Chukchee tales. I have mentioned the sea were-wolves, the giant polar bear (*koédtko*) with ivory body, the long-eared *rékkeh*. Another polar bear, the "hairless polar bear" (*nirg-ámki*), has very thin hair. It is a man-eater, and on stormy nights imitates the cries of a distressed traveler, luring people to come to his help, then devouring them. *Kéllhu* is a very large red wolf with long tail and gaping mouth. Its jaws open so wide that it is obliged to shut them with its paws. The general character of all these monsters is much like that of similar Eskimo monsters, though the details are different.

The benevolent spirits are called *vdtrgtn* ("being"), from the verb *tst-vdrktu* ("I exist," "I am"). The conception of these is rather indefinite. Usually sun, dawn, and sunrise are considered as *vdtrgtn*; but darkness and twilight are *kélet*. Several stars and constellations are also *vdtrgtn*. Such are the polar star (*álktp-énér*, "nail star"); Arcturus and Vega (*léutti*, "heads"), who are considered to be brothers or cousins; the zenith (*gínón-kanón*, "middle crown"); etc. To this class of beings also belong the very indefinite Compassionate Being (*ydi-vácu-vdtrgtn*), the World (*ádrgrnén*, "the outer one"), the Creator (*ténantómg lá*), etc.

Sometimes these beings are also loosely called *kélet*, but the punctilious speaker always makes a distinction. Thus, for instance, sacrifices to the *kélet* mean either ransom, or bribes to induce them to harm other mortals; while sacrifices to *vdtrgtn* signify either gratitude, or presents in order to receive some boon or luck in earthly pursuits.

The *kéle* are called by the Koryak *kála*, *kálak*, or *kámak* (the last is sometimes used also by Chukchee). Another Koryak name for *kéle* is *ñevétténén*, although, under the influence of the

Raven myth, this being has acquired a ludicrous character. The benevolent spirits, *vdtrgŋt*, of the Chukchee are called *vahiyŋit* by the Koryak.

The Yukaghir have no name for the *kŋlŋ*, calling him simply "the fabulous old man,"—evidently a reminiscence of the second class of *kŋlet*. In the same manner the Asiatic Eskimo use the word *tŋrŋtŋk* for all classes of *kŋlet*, while they call the *vdtrgŋt* *ktydŋrŋrak* (from *ktydŋrakunŋa*, "I exist," "I am").

Among the American Eskimo the first class of *kŋlet* are called *tornait* (singular, *tornaq*), and the second class *tornit* (singular, *tuneq*), but the difference between them is greater than that between corresponding classes of *kŋlet*.

In Asia, the idea corresponding to the Eskimo *inuŋa*, as owners of places, was developed chiefly among the Yukaghir.¹ According to their belief, each lake, river, and forest has its special master who disposes of all animals living in it. These masters live much in the same way as mortals; they build houses, marry, die, and even hold ceremonies and bring sacrifices. They are greatly fond of card-playing, and one master will often win from another a large part of his animals, which have to go over to his estate. The Chukchee call such masters *ŋtin* ("master") or *anŋrdlin* ("first in house"), and occasionally make small sacrifices to them; but in the tales their names appear but seldom, and for the greater part are replaced by the word *kŋlŋ*.

The Soul.—Many tales of shamans relate to the restoration of the souls of the dead. According to Chukchee belief, man has several souls (*uvtrit*). Besides those pertaining to the whole body, there are special limb-souls for hands and feet. Occasionally these latter may be lost. Then the corresponding limb begins to ache, but the limb-souls stay on the spot where they were lost. A shaman, however, can call them to himself, and they become his *ydnŋra-kŋlat*. I have a Chukchee drawing in which these limb-souls are represented as flying from the

¹ See also p. 583.

open country to the house of the shaman who summoned them.

One or all of the souls of the whole person may be stolen by the *kelle*; then the man becomes sick and sometimes dies. The shaman can find and restore the missing souls; if he fail in this, he can blow into the person a part of his breath to become a soul, or he may give him one of his servant-*kélet* to replace the missing soul. The souls are very small. When passing by they produce a sound like the humming of a bee or the drumming of a beetle.

The shamans are able to work various spells, by word of mouth or by means of objects. They also create special charms (*siwel*) and send them to persons "subject to anger" (*dāñēn-lāyot*); i. e., destined to incur the anger of shamans. The charms may assume various shapes, and even change their form, at the will of the sender. They appear as inanimate objects, animals, or men. When caught and disarmed they will serve their captor, or, if repulsed, will come back of their own accord and strike their sender.

The same thing happens in case the shaman's *kelle* is sent to harm an enemy, but it is disarmed on the road by another more powerful shaman.

Shamans working spells and charms, or performing any acts obnoxious to other people, are called "trifling shamans" (*léwleu-ēñēñilit*), or "evil-omened shamans" (*kārgu ēñēñilit*).

A shamanistic spell may be made harmless by the use of fresh birth-water of a woman or of a she-dog. The whole power of a shaman may be destroyed by it. For that reason women of child-bearing age rarely possess great shamanistic powers. Very old women, however, have special skill in handling charms. They are called "charm little old women"—*siwel-Enpñēwqāi*, which might be translated "witches."

The World.—I shall refer to the creation myth farther on and compare it with the genesis myth of the North Pacific Indians.

The Chukchee believe that there are nine worlds, one above the other, so that the upper side of the sky of one forms the ground of the next one. Some of them lie above the earth, others beneath it, and they are alternately peopled by men and by *kdlet*. The lowest world is inhabited by those who have died twice, and therefore cannot return to the earth. Besides these, there exist several worlds beyond the limits of the earth; for instance, those in the directions of the compass, the world under water, one small dark world possessed by "the bird-she-devil" (*gálha-naw-kdlé*), etc. These worlds are not very large, since shamans may easily travel over several worlds and come back in the same night. In one tale, however, a shaman who wanted to reach the sky is said to have gone upward. After many years of traveling he met a gray-haired shaman who explained that when still a young man he started on the same enterprise, but that he was coming back without having reached his goal. I collected this tale on Omolon river, where the Reindeer Chukchee live side by side with the Lamut, and perhaps it is borrowed from the latter. In genuine Chukchee tales we hear that a man, hurled forward by the force of an incantation, dashes onward through several worlds at once, pierces one head-foremost, another feet-foremost, and alights on the ground of clouds in the third or the fourth. Each world has a hole in the zenith of the sky, right under the base of the polar star; and the shamans slip through this hole while going from one world to another. The heroes of several tales fly up through this hole, riding an eagle or a thunder-bird. Through this hole the people of the upper world may look down upon the lower one.

The inhabitants of the upper world are called "Upper people" (*Girgór-rámkin*) or "Dawn people" (*Tādrgr-rámkin*), since the easiest way to reach them is simply to walk toward the dawn, where the gradual rise of the road leads to the sky.

In one tale a young man leaves his uncle's house, where he is not given enough to eat, and walks to the upper land, where he

is kindly received and treated to the best of everything. After a while his host offers to get him a bride. The youth assents; his host opens a hole in the ground by pulling out the stopper, and the lower world is in full view. Five girls play ball near a lake. The host begins to angle for one of them with a sharp fish-hook, succeeds in catching her by the navel, and drags her up; but he has caught only her soul: the body is left down below, and her companions wail because of her sudden death.¹

In another tale a woman is shown the lower world through a hole in the ground of the upper one. She feels a yearning for it and drops a tear. The women below are busy scraping skins. They think it is raining, and hasten into their houses.²

In still another tale the Dawn, commonly the mightiest among the "upper beings," has in his house many such holes, through which he can examine in turn different parts of the lower world.

In some of these tales the supreme being in the upper world, the Dawn, Creator, Polar-star Spirit, or whoever he may be, lets down by means of a strong rope the human visitor and his wife, after supplying them with provisions. Sometimes his rope is only a spider's thread, but is capable of sustaining twenty reindeer-loads without snapping.³

The upper world can be reached also along the path of the rainbow by means of the smoke from a funeral pyre. In one tale a shaman, every time he wants to visit the upper world, is killed and burned on the pyre, and then ascends with the smoke. He comes down again in a whirlwind, and the reindeer of his sleigh must be caught by the occupants of his house when rushing by, otherwise he will pass and never return.

In the story of Kúniñe, the hero and his companions descend to another world through a whirlpool.⁴ In another tale two

¹ *Chukchee Materials*, p. 184.

² *Ibid.*, p. 183.

³ Compare Bossi, *Indianische Sagen*, p. 40.

⁴ *Chukchee Materials*, p. 312.

wandering brothers descend to the bottom of the sea, to a world under water, and then ascend to a separate world which is supported on a long needle.¹

The sun is believed to be a man clad in bright garments. He drives around the sky with dogs or reindeer. He descends along one of his own rays and carries away a young woman. Then he brings down a herd of white reindeer, and in their stead takes up from below a herd of brown and gray reindeer, which are considered to have originated on earth or underground.

The moon is a man too, but to a certain extent he takes a position in contrast to that of the sun. He is called the sun of the *kille*, and the suns of some of the lower worlds are quite similar to our moon. Shamans apply to the moon for evil spells and incantations. Notwithstanding his great powers, his attempt to ravish a mortal girl proved unsuccessful. She even succeeded in pinioning his hands, and released him only on his urgent entreaties.

The well-known story of the moon carrying away a young boy or a girl who had been badly treated in his or her earthly life, and who is now visible on the moon, occurs also.

A person who looks at the moon, especially when it is full, may be bereft of his wits or carried away altogether.

The polar star is sometimes called "pole-stuck star" (*unp-éner*²). This name occurs throughout northern Asia. It suggests a simile, wherein all other stars move around the polar star as horses (or reindeer) tethered to a motionless pole. The polar star and the two "heads" (Arcturus and Vega) are considered as chiefs of the stars (*óóac*³).

Orion is an archer called *Rutténin*, aiming with his bow at a "group of women" (Pleiades), each of whom refused to marry him on account of the size of his membrum virile, which is represented by two stars extending downward. He had another wife

¹ *Chukchee Materials*, p. 235.

² See page 587.

(Leo), but they quarreled, and she struck him with her tailoring-board, causing his back to become crooked; therefore he cast off the woman, who, being tired, fell asleep in the middle of the sky, her head resting on her right sleeve. Aldebaran is an arrow of *Rulténin*, stuck on a mossy bog, represented by numerous small stars. The Milky Way is a river with sandy banks and many islands; in the middle stand five wild reindeer bucks (*Cassiopeia*). *Ursa Major* represents six warriors fighting with slings, the seventh double star being a gray fox gnawing a pair of reindeer-antlers. *Corona borealis* is a polar-bear's paw. Shooting stars are said to be stars that go coasting down hill on sleds. Comets are called "smoking stars," the smoke indicating that much cooking is being done where they are. Planets are called "crooked-way stars," because of their irregular paths.¹ Most of the constellations mentioned have the same names and similar explanations among the Koryak.

Dawn and Twilight play an important part in ceremonials and sacrifices. The two are said to live in marriage with a single woman stolen from the earth. In one tale an earthly shaman wants this woman for himself, and ascends to their dwelling. He creates a girl out of snow and grass, and pretends that she is his sister. The snow girl is given in exchange for the wife of the hosts, but in the morning they find that she has dissolved. Then a shamanistic contest begins. Among various feats, the rivals have to run along a thin pole over a boiling river. The earthly shaman does not wait for his turn, but starts from the opposite end at the same time as the other competitors. When he meets them, he jumps over their heads and runs on. Then they have to leap over a chasm, which is stuck all along with knives, and the earthly shaman performs the feat backwards. Then a huge kettle filled with boiling water is placed by the side of a larch-tree. A thin pole with a sharp end protrudes from the water.

¹ Regarding the *Aurora borealis*, see p. 634.
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The competitors have to catch the end of a rope which hangs from the larch-tree; then they must jump into the kettle, alight on the end of the pole, and land safely on the ground, etc. The earthly shaman overpowers his supernatural competitors, robs them of the woman, and finally kills them.¹

In another tale a shaman named Attfigitki went with his cousin to the sea. In the open they saw a small old man sitting on the water with legs crossed and covering the entrance to the world under water. By promising to give him, on their return home, an old blind she-dog, gray with age, they were permitted to enter. Descending to the world under water, they walked along and found still another world supported in the air on the end of a long needle. They turned into mosquitoes, flew upward, and slipped through the needle's eye into this world; then they became men again. The owner of this world was the Earth (*Nútenut*). He sits in a large iron house surrounded by Sun, Moon, Sky, Sea, Dawn, Darkness, World, who are the suitors of his beautiful daughter. Their hands are covered with scars, because at every meal, when the tray with the meat is carried in, the master strikes with a long knife at every hand that reaches out for the food. Being powerful shamans, however, the guests immediately heal their wounds by breathing on them. Attfigitki sits down by himself, puts his cap on his lap, and draws in his breath. Plenty of meat jumps over into the cap, and Nútenut has no occasion to interfere.

After the meal the suitors are sent to fetch fuel. A large tree-trunk stands up in the middle of the sea. As soon as a suitor climbs it and begins to cut its branches with an axe, the spirit that lives in the tree-trunk shakes it, and the wood-cutter falls down and is drowned. The suitors, being shamans, rise again and come back to the shore. Attfigitki and his cousin bring a quantity of food and drop it on the tree-trunk. While the spirit is busy eating the food, they succeed in cutting off a

¹ *Chukchee Materials*, p. 227.

piece of wood as large as a house. After a while a shamanistic contest begins in the sleeping-room. The lights are extinguished. Sun brings his luminary and scorches the people. Sea brings the flood and drowns everything. Moon brings the "shutting rocks," and crushes the competitors. Dawn brings two polar bears, which eat everybody. Darkness brings two black bears, which do the same. Sky makes its upper hard crust fall down and crushes the people. World brings a snow-tempest and freezes them. After each performance all the rival shamans come to life again. The two men remain unhurt, because they turn now into red worms, then into ermines or into wag-tails. Finally Attfigtki, in his turn, begins to perform. He lifts his staff and touches the competitors one by one. One-half of the body of each is burned, shrunk, or weakened. They fly away terrified, and Attfigtki carries off the bride.¹

The Chukchee ideas of the position of the worlds in respect to one another, also of the human souls carried away by *kellet* and then restored by shamans, are presented with curious details in the story of "The Scabby Shaman," which I give in extenso:

There lived in the midland country a mighty shaman, Meémgin by name, rich in reindeer. He had eighty houses, all well filled with people, and eight large herds. His reindeer were like fallen boughs in a forest. His only son, Rfntew, suddenly died. Meémgin sought for him throughout the whole earth, searched all worlds, and could not find him. In great sorrow he sat down in his sleeping-room and ceased to practise his art, not wanting to go out. His son's body lay before him on a skin. Three years it lay there. All the flesh had decayed and fallen off, because three years had passed by. The joints had become loosened, and the intestines had fallen out upon the skin and mingled with the decayed hair. At last the father arose, called two of his working-men, and said: "Beyond the limits of the earth, where the earth meets the sky, lives the greatest of all shamans, Scabby-one. Call on him, and say to him, 'Meémgin requests you to revive his son.' " He selected for his messengers four of his best reindeer. He hitched up, bade the men sit down, laid the reins on the reindeer, and put the

¹ *Chukchee Materials*, p. 235.

nooses around the men's wrists; then he charmed the heads and ears of the reindeer, the sledges, and the harness. Then he blew on the reindeer, and they flew away high up in the air like geese.

Scabby-one has a hundred houses, which stand on the "attainable limit of the sky." He lies in his sleeping-room unable to move. His whole body is covered with scabs. His mouth and palate, hands and feet, lips and eyes, soles, and ends of his nails, are covered with scabs. His wife moves him about like a log. Before the arrival of the messengers he said to his wife: "Place me near the rear wall and give me my drum. I shall beat it for a while, I shall look around in a dream." He struck the drum, which hung on a line from the ceiling because he was unable to hold it. After a while he said to his wife: "Have plenty of food cooked today. Guests are coming." He had hardly finished speaking when the men came. "Oh!" said Scabby-one, "who are you, and who sent you?"—"We are Meemgn's men."—"How did you travel?"—"With reindeer."—"What are reindeer? What are they like?"—"Don't you know? What do you and your people live on; there are so many of you? What kind of herds do you keep?"—"Herds of dogs. We live on dog meat." And indeed around the houses were walking innumerable dogs, large and fat, equal in size to reindeer. "Bring me your reindeer, I want to look at them." The men did so. The shaman looked them over and over, and said, "These reindeer are mine." They thought, "Now, how are we going to get back?" He guessed their thoughts immediately, and said: "Why do you doubt me? Do I need your reindeer?" They thought again: "How can he take our reindeer? The dogs will tear them to pieces." Well," replied Scabby-one, though nobody spoke a word, "I can so arrange that the dogs won't worry them. Bring the reindeer here." He charmed their ears, noses, and mouths; and the reindeer went to the houses, lifting their tails like dogs. "Let us go," said Scabby-one. There was a steep mountain close to the village. "Let us climb up," said he. They took him by his arms and carried him off to the top. "Now lie down to sleep," said Scabby-one, and he made them lie down side by side. As soon as they had shut their eyes, he bade all the grass on the mountain-top to gather around his hands, and began to make a grass harness. When it was finished, he commanded it to tie itself around the necks of the sleepers. Then he took the reins and rode across the sky, alighting on the mountain near Meemgn's village. The two men did not know what had happened, but all the while remained in a deep sleep.

Scabby-one entered Meemgin's house. The father was sitting before the decayed body of his son, and did not even lift his head. "I have come at your call," said Scabby-one. "Although it may be difficult to find him who has been carried away, still an attempt may be made. And we are both equally gifted in magic. Have you sought for your son?"—"I have."—"Where have you sought?"—"Everywhere."—"Have you found anything?"—"Nothing."—"In the sky above our heads are numerous shining stars. Have you looked among them?"—"I have."—"Well?"—"Nothing."—"Oh, where can we find your son if he is not there?"

"In the sea yonder live numerous large animals, walruses,—thong-seals, small seals. Have you looked among them?"—"I have."—"Well?"—"Nothing."—"Oh, where can we find your son if he is not there?"—"In the depths of the sea live another set of medium-sized beings, white, red, gray fishes, naked or covered with scales. Have you sought among those?"—"I have."—"Well?"—"Nothing."—"Oh, where can we find him if not there!"

"On the bottom of the sea live a third set of small beings,—shells, starfish, worms, sea-bugs. Have you looked among those?"—"I have."—"Well?"—"Nothing."—"Oh, where shall we find him if not there?"

"On the land all kinds of animals are running around,—reindeer, foxes, bears, hares, wolves. On the earth's skin creep various insects,—white-capped beetles, centipedes, lady-bugs, and black beetles. Through the earth's bosom countless red worms are squeezing themselves. Have you sought among all these?"—"Yes."—"Well?"—"Nothing."—"Oh, where can we find him if he is not there?"

"On the earth's surface grow countless weeds and herbs. Have you looked among those, from one stalk to another?"—"I have."—"Have you looked over all willow-sprouts in the brush? Have you looked over all larch-trees in the forest?"—"Yes, I have."—"The banks of the rivers are covered with pebbles. Have you sought among those?"—"Yes."—"Well?"—"Nothing."—"Oh, where shall we find your son if he is not there?"—"Everything visible and tangible, all that exists on the earth—have you looked over all that?"—"Yes."—"Well?"—"Nothing."

"Under this earth exists another world, belonging to the *Alet*. It has skies of its own, stars, sun and moon, land and sea. Have you looked over all that exists on that earth, the stars above, the fishes in the sea, the herbs of the field, and the worms in the soil?"—"Yes."—"Well?"—"Nothing."

"Under that world there is a third world, peopled with men. It too

has a sun and a moon, stars, and waters. Have you sought among the things in that world?

"Yonder, above the outer side of the sky, there is a world, belonging to the upper *klet*, with new stars, sun and moon, and sea. Have you looked among them?

"Over that world there exists one more, belonging to men, having earth and stars, with game in the forests, and fish in the water. Have you sought there?"—"Yes."

"Which world has more life, the upper or the under one?"—"They are just equal."—"Which sea has more fish, which land more game, which air more birds, the upper or the under one?"—"They are just equal."—"Have you searched the world of sunset?"—"Yes."—"Have you searched the world of sunrise, and that of the last rays of the twilight, and that of the noon, and that of the midnight?"—"Yes, every one. He is nowhere."

"Highest of all there is a small world quite by itself, belonging to the female *kke*-bird. Have you looked there?"—"No. I don't know it."—"He is probably there. The bird must have carried away your boy. I will go and see."

He rattled with the drum and sank into the earth. Then far away was heard the clatter of the drum. Rising out of the ground, he flew upward with his drum to the world of the *kke*-bird.

Two worlds were on his road. Twice he went up, and then came down again, crossing his own tracks like a hunted fox. Then he reached the small world above, and found a large stone house. Looking down the vent-hole, he saw a sleeping-room of stone. As he looked through its walls, he saw the boy's soul pinioned with iron bands behind the large lamp, each joint tied separately. The *kke*-bird had carried him away for her food, and pinioned him there. Every morning she would ask, "What kind of food did you eat on earth?"—"I ate reindeer-meat, seal-blubber, walrus-fat, and whale-skin." Then she would fly away over the three worlds, and would bring back every kind of meat, which she gave him to make him fatter. Huge pieces of fat and meat were suspended from the stone walls of the house. At the time of the shaman's arrival the bird was not at home; but two *rekken* were tied in front of the entrance. Their ears kept turning toward every direction and noticed even the slightest noise. Scabby-one transformed himself into a mosquito and attempted to fly in, but the monsters snapped at him when they heard the buzzing of his wings. He turned into a gadfly, but to no avail. He turned into a white-capped beetle, but with no better success. "Oh, bad luck!" he cried. He turned into a carrion-fly, and in this shape flew into the house.

The *rékken* dogs did not hinder him, because there were many carrion-flies around the meat. He went into the sleeping-room, cut the soul's bonds and transformed it into another carrion-fly. They escaped from the house, and made their way toward their own world, crossing their tracks as before, and turning hither and thither like hunted foxes. When they had reached the lowest sky, however, the *k/le*-bird overtook them. She shouted: "Ko, ko, ko! Why did you carry away my little boy?"—"Stolen from the thief, restored to the owner," answered Scabby-one.—"Give him back to me, or I shall kill you!" The beating of her wings made them flutter in the air like dry leaves. "Oh," said Scabby-one, "she really wants to kill me. Now I shall try." Pulling his right hand up his sleeve, he moved his little finger upwards. Fire fell down, singeing the *k/le*-bird's wings. "Oh, oh!" cried she, "indeed, you want to kill me. Now it is my turn." She beat her wings again; but to no avail, for her feathers were singed.

Then Scabby-one killed the *k/le*-bird and burnt her to ashes. "Let us make haste," said Scabby-one. The people in Meémgin's house heard a distant clatter. It descended, sank into the earth, and after a while rose in the middle of the sleeping-room. "I have brought the boy. Let us make haste!" said Scabby-one. He called his *k/let* and gave them the boy's soul to hold, and then looked hard at the decayed heap and gulped it down, spattering the putrid fluid about. Then he shouted, "Bring a new white skin!" He vomited, and spat out the boy's body. All the bones were in their right places, and the flesh stuck to the bones again. Then he swallowed the body a second time and spat it out again. It was covered with new skin, all sores were smoothed down. He swallowed it a third time and spat it out again: blood mounted in the cheeks, and the lips almost wanted to speak. Scabby-one shouted, "Give me the soul!" He swallowed it and spat it down on the body. The soul passed through the body and stuck in the wall of the house. "The body is too cold," said Scabby-one; "it will not hold together." He swallowed the body a fourth time, warmed it in his stomach, and spat it out again on the skin. Then he flung the soul at it. "Oh, oh, oh!" sighed the boy, and then sat down on the skin.

Then Scabby-one was paid with a herd of reindeer. He said: "I am going now. Let all people enter the house and not come out again, because I shall take with me everything that is outside. You must take good care of the boy. Since he has come back from the dead, he will be a great shaman, even greater than I; but his heart and mind will incline to the bad. Still do not thwart him, for, if you do, he will overpower you." He beat his drum, began an incantation, and moved

around the house. Presently the sound of the song, the rattling of the drum, and the clattering of the reindeer-hoofs were heard ascending higher and higher, first to the level of the vent-hole, then over it; then it gradually vanished upward.

As soon as Scabby-one had left, Rñntew began to maltreat the people. He ran about in the night outraging every woman, even the oldest, and beating every man. The people were powerless against him. If they tried to work evil charms against him, he caught the charms, gathered the secret words of the would-be sorcerers in a mitten, and in the morning distributed them among their owners, saying, "This is your word, and this is yours, and this is yours."

His father began to repent of his restoration to life, for the people were coming every day with fresh complaints. Finally he said, "We will remove him to another world." He went towards sunset to find a *klee*-witch.

The witch immediately complied with his request and went to Meémgin's house, carrying her long staff with blood-stained point. She posted herself in ambush before the entrance, but Rñntew guessed her purpose, turned into a white goose, and flew away through the vent-hole. The witch gave chase, but he escaped to the land of darkness. Then he lost his way in the dark, wandered around, and suddenly stumbled over a screech-owl, which said, "Oh, oh! Don't kick me!"—"Why, are you a man too?"—"Yes, we are residents of this country, and have a house here in the darkness."—"If you are residents here, give me shelter; I am weary, and want to sleep."—"Come in," said the owl; and he put him under his wing. He continued, "When you want to pass water, ask for a tub."

The next day he went on, and had a similar adventure with an eagle. In the morning he bade him farewell. "There is your way," said the eagle, pointing straight ahead, where a small bright spot was visible, not larger than the hole made in the reindeer-skin by a reindeer fly's larva. "That light comes from the bright world. You must know, however, that the old woman has placed her staff across the entrance the whole length of the earth. She has transformed it into a high ridge of iron mountains. She has split herself in two, and each half keeps guard at one end of the staff. Do not try to go around the ridge, but climb across it, no matter how steep it may be. Go straight ahead to the place where you see a red line glowing like red rust on iron. It is the blood with which the point of her staff is smeared. If you try to go around the ridge you will be killed. Even if you were the greatest of all shamans you would be killed."

In due time Rñtew reached the mountains. They were quite vertical. Still he began to climb, clinging to the iron rocks with his nails and teeth. After a few steps he lost his foothold and tumbled down, but to his amazement he found himself on the other side of the mountains.¹ Thus Rñtew came back home and immediately resumed his old tricks. His father made a second attempt to put him out of the way, and summoned a little old woman of the Kerek tribe,² who succeeded in depriving Rñtew of his senses, and then sent him out-doors to fetch some small thing. Meanwhile she transformed the sleeping-room into one world, and the house into another. Thus when leaving the house he really went out of two worlds. He recovered his senses on a high cliff, astride of a piece of rock overhanging the sea, and in such a position that the slightest motion would have made him lose his hold. He sat there for five days, when at last he saw a raven flying by. "O, Rñtew! man of many tricks, how did you get there?"—"I don't know."—"Get down!"—"I cannot."—"Will not any of your tricks make you free?"—"You had better come and help me."—"What are you ready to pay?"—"Anything you want."—"When you come home, kill every living thing for my food."—"All right."—"Then hold your breath and listen. One day and one night will pass away, then you will see a drift-log carried by on the waves. When it is close by, leap down from your seat; don't think whether you will break your neck or not. When you have alighted on the log, you will pass into the open sea. Shut your eyes, then you will reach the shore. When you hear the rattle of the pebbles, go ahead to firm ground. With eyes shut, take a handful of pebbles and pour them from one hand into the other. They will become softer and softer. When at last you feel that they are as soft as cloudberry, throw them behind you over your head. Then you will be lifted and carried across another sea. Shut your eyes and take a handful of pebbles, and pour them from hand to hand. Again you will be carried across the sea. On that shore you will find a small camping-site. Search it attentively; you will find a needle. Then on another camping-site you will find a round bead as red as a cloudberry. When you reach home, make a small drum, skin a black beetle to cover it, then perform the *mñt' tñt' n* rites for the needle and the bead."³

¹ In another version the mountain-ridge, though it appears very high from afar, assumes its real size—that of the woman's staff—when he reaches it. After that he meets a large sea, which, when he reaches it, is seen to be a flat drum.

² A branch of the Koryak having a great reputation for skill in magic.

³ The main feature of these rites is a thank-offering to the souls of objects found, or obtained in hunting.

Thus Ríntew came home and sent word to all his neighbors, saying he would perform a great ceremony. Meanwhile he began to construct a large wooden house, and finished it before all the people had assembled. They went into the building and entirely filled it. The Kerek witch came too, and he made a round mound for her seat, because she was so small. Then he started with his incantations. "Needle, come down!" he sang. It came down on a slender shining thread. He asked, "To whom shall I give it?"—"Me, me!" exclaimed all the women around. But the needle went up again, and vanished through the vent-hole.

Ríntew beat his beetle-skin drum and chanted on. "When I wandered, lost among the unknown worlds, I held in my hand pebbles, which softened like cloudberry. Here is my cloudberry as hard as a pebble."¹ The cloudberry bead came down on the shining metal thread. "Who will take this pendant?"—"I will!" cried all the women around, and tried to lay hold of it. Again Ríntew beat his beetle-skin drum, and chanted on: "When I sat on the stone pillar overhanging the sea, I promised some trifle to the black raven. You cackling one, take now your booty! You little Kerek witch, do you feel gratified? Your charms will fall down on your own wicked body." With a single leap he sprang out through the vent-hole. The beetle-skin drum followed, and, suddenly expanding, stuck in the opening. All doors and exits vanished. Of its own accord the drumstick began to beat the drum from beneath. The bead commenced to enlarge; at first it grew to the size of the upper piece of a drill, then to that of an infant's head; then it became as large as a reindeer's paunch, then as a blubber-bag, then as the carcass of a fat walrus, larger and larger, filling the house, and squeezing the people to the beams. The drumstick rattled on, the bead grew, blood oozed through the beams, the house burst and fell down. A bloody stream flowed to the sea from Ríntew's building.

Thus he exterminated all his people, and became the ancestor of a new tribe.²

Animal Tales.—A considerable part of the animal stories of

¹ Concerning pebbles turned into beads, cf. Nelson, "Eskimo about Bering Strait," *Eighteenth Report Bureau of American Ethnology*, 1896-97, p. 512. The details of another Chukchee tale resemble the Alaskan story more closely. A woman is floating on a sealakin float in the darkness. She comes to a shore, sinks ankle-deep into heaps of small soft things, takes a number of them, and afterward, when she reaches our world, finds them to be beads.

² *Chukchee Materials*, p. 201.

the Chukchee relate to the Raven myth, and will be treated later. Others are generally short, and refer to various animals which often have special names. The fox is called "field-woman" (*náte-ñéut*); the mouse, "breech-woman" (*quimé-ñéut*); the spermophilus, "spermophilus-woman" (*ytle-ñéut*); small spider, "spider-woman" (*kúrgu-ñéut*); a certain small black beetle, "shining-black-woman" (*tá'qi-ñéut*). All these animals are females. Chiefly in incantations and in shamanistic performances, male animals bear special names. The wild reindeer is called "air-went-out" (*digintó*), because of his fear of human smell. The black bear is called "the-little-one-walking-afoot" (*čéivultqás*), or "living-under-the-(steep-) hill" (*metwéčtā*).

The animal stories of other West Bering tribes are, in general character and even in details, very much like those of the Chukchee. Animal subjects are treated in a similar manner from Kolyma river to Kamchatka. A she-fox, who wants to help an old man, advises him to make a large rug of white hare-skin, and to spread it across an open place in a frozen river. She finds some elks, and, under the pretext of running a race, contrives to bring them to the covered spot, where they break through and are speared by the old man. This tale exists among the Chukchee, Koryak, Yukaghir of the upper Kolyma,¹ Russianized Yukaghir of the lower Kolyma, and Kamchadale.

The subjects of the animal stories are treated in the same way in the folklore of the Chukchee and of the American Eskimo, though with different details. Sometimes two stories from the Asiatic and the American sides are so strikingly alike in character, notwithstanding the difference in subject and details, that one feels as if they were both from the same place and stock. Here is an instance:

A mosquito, when practising ceremonial songs in his dwelling, saw a healthy boy passing by. "What a fine boy!" quoth he. "Make

¹ Jochelson, *Materials for the Study of the Yukaghir Language and Folklore*, St Petersburg, 1900, p. 30.

haste!" he said, turning to his wife. "Give me my boots and mittens! I must be after him! Hurry up! I shall miss him! Stay! Last night I had a dream; my wing became sprained. What may be the reason for this dream! Oh, well! It is all right! Here, my boots! He walks away! Queer dream! Fine boy!" He flew off, alighted on the boy's forehead and began to drink, but the boy rubbed the spot and crushed him. His wings were sprained.

This short Chukchee tale is a good match for "The Lemming and the Owl" of the American Eskimo, though not dealing with the same subject.

The animal stories of the Ainu, and even of the Japanese, though the latter are much more elaborate, belong evidently to the same group of tales.

I do not need to discuss fully here the division of Chukchee folklore relating to wars with their neighbors, although such stories are elaborate and sometimes even do not lack epic breadth and force. Some incidents, however, bearing marked resemblance to American stories, will be discussed later.

II.—COMPARISON BETWEEN THE FOLKLORE OF NORTHEASTERN SIBERIA AND THAT OF THE ESKIMO.

A comparison between the folklore of both sides of Bering sea may be made in two directions: first, between the American Eskimo and the Asiatic Chukchee, who live in the immediate neighborhood of the Eskimo; and, second, between the Indians of northwestern America and the tribes of northeastern Siberia. In the present chapter a comparison between Chukchee and Eskimo folklore will be drawn.

The Chukchee show many traces of the material and mental influence exerted by the Eskimo. I must mention, however, that the Asiatic Eskimo, who live in a few villages along the northern part of the western shore of Bering sea, though closely resembling the American branches of their people in their means of material subsistence, language, social customs, etc., have not preserved much of original Eskimo folklore. The tales that I could

collect among them are, for the greater part, disjoined and incoherent. Even the most characteristic Eskimo stories, if known at all, are believed by them to have originated among the Chukchee. This, of course, may have been caused by their position among the Asiatic tribes, though the Alaskan material published in Nelson's memoir strikes me as being of the same character.

The general character of Chukchee and Eskimo tales is quite alike, and the chief topics on both sides of Bering sea are about the same. I will briefly describe the most frequent ones.

A young boy is left alone in the wilderness, or starved and despised by his village neighbors. His bad luck is often shared by his old grandmother. With the gradual increase of his strength and nimbleness, or by means of magic help, or in some other way, he becomes a successful hunter and warrior, and ultimately, out of revenge, kills all the other inhabitants of the village, leaving only a few survivors.

A wife is cast off by her husband for the sake of another woman. By some magic influence she seeks revenge on him and on her rival.

A woman is carried away by a mighty being. Her husband, or sometimes her brother, goes in search of her, and, after various adventures, comes to the land of the aggressor. He is offered a trial of strength, comes out as the victor, and carries back his wife or sister.

A man or two men seeking adventure, or a poor boy seeking a chance of bettering his lot, come to a rich and powerful man with a beautiful daughter, who has many suitors. The newcomers must submit to various tests of strength and shamanistic skill; they prove victors, and carry away the bride. Often the young man does not ask permission of the father, but contrives on the first night to gain access to the bride, though she is confined in an iron box. She receives him with joy, and in the morning the parents adapt themselves to the inevitable.

In regard to the shamanistic contest, it is important to state

that in many West Bering tales it is carried out in special ceremonial-houses evidently similar to those existing everywhere in America.

In the story of "The Scabby Shaman,"¹ Rintew, on returning from his last journey, constructs a special singing-house, and invites all his neighbors to a ceremony in the same way as is done by so many Eskimo and Indian heroes. At the present time there are no tribal singing-houses, or anything of that sort, on the west coast of Bering sea, and even the traditions in regard to them are exceedingly scanty. From some hints in Krasheninikoff's book it might seem that the Kamchadale had some common place for ceremonies held by the united inhabitants of the village.² Lieutenant Hooper³ very definitely describes a dancing-house (council-room as well as theater, he says) in the Asiatic Eskimo village of Unisak (Indian point), visited by him in 1848. At present, however, even the oldest inhabitants do not remember anything about such houses. In the Chukchee village of Nūnligren, about a hundred miles westward from Indian point, I found that one of the former underground houses, which are now replaced by tent-like dwellings, was used by all families in turn for their autumn ceremonies. Even now the house belongs to one family. Formerly other families had to pay for its use by special offerings every autumn. Three years ago this ceremonial-house was abandoned, and at the time of my visit it was full of congealed snow and of earth that had crumbled from the walls.

The subjects mentioned above, and others similar to them, are treated by both the Chukchee and the American Eskimo in a similar way, with a whole series of identical incidents and characteristic details.

I will give here a few examples of stories alike in many details.

¹ See p. 595.

² Krasheninikoff, *Description of the Land Kamchatka*, vol. II, chap. xiii, St Petersburg, 1819.

³ *Ten Months among the Tushis*, London, 1853.

1. An old maid, unable to find a husband, hugs for spite an old whale-skull lying on the beach. The skull suddenly comes to life and drags her away into the sea, notwithstanding the efforts of her female companions. The whale carries her, through the passage between the opening and shutting rocks, to a village across the sea, and makes her his wife. His whole body is covered with sores, and she has to pick out the barnacles, and in doing so wears her fingers away to the very bones. Her brother at home wants to find her, and constructs a boat, which he remodels over and over again in order to make it swifter. The third time it vies with the birds flying above. Still he is not content; he reconstructs it again, and at last can leave behind even the small *qatdyalhtu* (*Sterna hirundo*), the swiftest of all birds. Eight men go in this boat to the land of the whale. They pass through the passage between the moving rocks. The woman's brother leaves the boat and its crew on shore, and with one companion starts for the village. On the way they kill two ermines and two small birds (the species is not indicated), and take off their skins, to be used as protecting amulets. The whale-man treats them with the best of his provisions, then suggests that they shall have some amusement, meaning a shamanistic contest. The lights are put out. The sea comes into the house, but they put on their bird-skins, and swim on the surface of the water. Then a heavy round stone is brought in, the lights are again put out, and the stone begins to roll all over the ground; but the visitors put on their ermine-skins and escape underground. At night they lead away the woman and make their escape in their boat. The whale pursues, and nearly overtakes them, but is delayed by the woman, who throws into the water different parts of her dress. Every time he reaches part of her dress, he stops to look at it. Finally he comes too near to the shore, and is killed by the villagers.

The rescued woman is with child, and in due time gives birth to a young whale. First she keeps it in a water-tub and feeds it

with small worms; then she carries it to a lake and feeds it with small fish. At the same time she allows it freely her breast. After a long interval she carries it to the sea, and it swims away. It comes back soon, however, and brings along with it several other whales which are tempted by its insinuating words. They are destined to be killed by the people. The whole coast prospers. But the mother, fearing for her whale-son, sews two red tassels to his back to serve as a mark of identification. Finally the whale is killed by a native of a neighboring village, who envies the prosperity of the whale's relatives. This leads to a war of extermination.¹

Many details, such as the opening and shutting rocks, the boat equalling birds in swiftness, the crew of eight men who are left in concealment on a strange shore, two companions going to the village, the protecting skin amulets, the shamanistic contest, and a heavy stone rolling around the house in the darkness, often besmeared with the blood of its former victims, commonly occur in the tales of the Chukchee.

The gate of moving rocks is called "attainable border of the sky" (*ye-pklt-tgtn*), or otherwise "attainable border of the birds" (*gdtha-pklt-tgtn*). According to Chukchee belief, the birds, when flying to their own world every fall, have to pass through this gate. The rocks shut so quickly that those lagging behind are caught and crushed between them. The ground all around the rocks is covered a fathom deep with bloody mud of pounded bird-flesh. Feathers fly around like snow; but there is no other passage.

2. An old woman had six sons. Five went hunting and never returned. The youngest remained at home, and the mother refused to let him go out. They lived on scraps of the worst seal-meat, which they received as alms from their neighbors.

¹ *Chukchee Materials*, p. 297. Compare Rink, *Tales and Traditions of the Eskimo*, "A Tale about Two Girls," p. 126; Boss, *Eskimo of Baffin Land*, "Story of Three Girls," p. 317.

Finally the boy succeeded in getting away unobserved by his mother. He reached a steep mountain, ascended its top, but stumbled and rolled down the other side. On the middle of the slope he was stopped by a net (or trap) made of knives sticking upward from the ground; but he was not hurt. He was, however, unable to escape. Suddenly he heard a voice, "Oh, oh! the little seal nearly escaped!" It was *kelle*, who took him by the neck and began to tickle him on the belly in order to make sure that he was dead. But the boy hardened his muscles, and the *kelle* thought he was dead. He lashed him on a sled. The *kelle* tightened the lines, and the boy strained himself so much when hardening his body, that he broke wind. (In another version, the *kelle* carries the boy on his back; but on the way the boy stealthily holds on to the grass and to the branches of the trees. Then he suddenly lets them go and makes the *kelle* stumble and fall on his face.)

When the *kelle* reaches home, his children run to meet him, and joyfully exclaim, "A seal! A seal!" (In another version, one says, "I shall have his eyes!" Another, "I shall have his paws!" and a third one wants to have his nose.)

The *kelle* brings him into the house. The children begin to examine him and feel of him; but on the sly he pinches the leg of one. The boy whimpers from pain. Then the father says, "Don't! This is a strange little seal. Somehow, when I tightened its lashings on the sled, it cracked." The mother begins to prepare the meal, and hangs over the fire a large kettle out of which stick human hands, shrunken and shriveled. "These are my brothers' hands," thinks the boy. After supper the *kelle*-woman wants to skin the seal, but, on feeling it, finds that it is still too soft, and not hardened by frost. (In another version it is still too hard to be carved, the reason being that the boy was hardening his muscles.)

"Strange little seal!" repeats her husband. "Leave it till

¹ Compare also Bous, *Indianische Sagen*, "Snenziq," p. 251.

tomorrow." Before going to sleep he takes his chamber-pot, defecates into it, and bids his excrements to watch over the boy. After a while the boy moves his leg. The excrements immediately begin to shriek and give warning. "Kaw, kaw, kaw! Look after the seal!" The *kelle* gets up, but the boy is again motionless. "Why!" says the *kelle*, "you are playing jokes on me!" and he urinates on top of his excrements. Again he goes to sleep. The boy turns his head. "Kaw, kaw, kaw!" screams the vessel, but not so loud as before. The boy quickly stands up and fills the vessel with his own urine and excrements, thus smothering the voice. Then he takes the round meat-knife of the *kelle*-woman and kills the whole family.¹ (In another version he says, while cutting the neck of the first boy, "Here are the eyes for you!" and while killing the second, "Here are the paws for you!"')

This tale is analogous to the second part of the Eskimo tale of "Nareya,"² though many details, such as human hands sticking out of the kettle, recall other Eskimo tales. In one of these,³ it is told that a brother, visiting his sister married in a strange land, is treated to a dish of blubber mixed with berries, on the bottom of which he perceives shrunken human hands.

In a version of this tale collected among the Russianized Yukaghir on the lower Kolyma, the berries in the dish consist of red finger-ends chopped off and boiled in blubber. The young children of the *kelle* call them "cloudberryes," and keep asking their mother for some.

On the other hand, some episodes of the Nareya tale appear in other Chukchee stories. For instance, in No. 164 of "Chukchee Materials," the *kelle* pursues some young girls, who succeed in crossing the river. Unable to find the ford, the *kelle*, following their advice, tries to drink all the water of the river, and then

¹ *Chukchee Materials*, p. 192.

² *Boss, Eskimo of Ruffin Land*, p. 177.

³ *Rink, Tales and Traditions*, p. 130.

begins to cross. The girls bid him hurry, but at his first quick step he bursts.

3. The bird-woman story is also common to the Chukchee and to the Eskimo. A man sees five white and beautiful women bathing in a lake. On the beach he finds their white goose-skin jackets and takes possession of them. The women come to the shore and ask for their jackets. The last one is the fairest of all. She is as pretty as fire. The man refuses to return her jacket, while the others put on their jackets, turn into white geese, and fly away. The man takes the goose-woman to his house and makes her his wife. She gives birth to a son. After a while the mother-in-law bids her go into the country to dig edible roots. She brings grass-stalks instead. The old woman scolds her and makes her weep. As soon as the birds begin to migrate, the goose-woman, who cannot sleep at night, watches them, and wants to speak to them. Twelve white geese fly by. She calls, and asks them for help. "Take me to our land," she says. They reply: "We have no sledges." Then each drops one feather from its wings. She gathers these feathers, sews them to her sleeves, and flies away with the geese. The man reproves his mother and bids her make for him ten pairs of new boots. He fills the boots with provisions and starts in pursuit of his goose-wife. Each day he wears out one pair of boots and consumes the provision contained in them. At last, having used up all his boots, he comes to the seashore. A little old man stands on the beach, chopping wood with an adze. (In another version, the chips of wood, when falling to the ground, are transformed into fish. In still another, they glide away to the sea and turn into fishes.) He looks at the old man's anus, and perceives that he can look through him right up to his mouth. He enters the anus and comes out of the mouth. "Where do you come from?" asks the old man. "From your right side," answers he, fearing to anger him if he should tell the truth. The old man bids him bring a log of driftwood that lies near by. With his adze he hollows it out, and makes a canoe

with a tight cover that fits like the lid of a snuff-box. In this canoe the man crosses to another shore. His little son plays on the beach with other children and reports to the goose-woman that her husband has come. She does not believe him, but at last steps out to meet the new-comer. "Why did you come?" she asks. "They will kill you! A very strong person has taken me to be his wife!"—"Well," replies he, "I came for death, not for life!"

A glaucus gull (*Larus glaucus*) is the woman's husband. He is the proudest and strongest man in the village. His house stands in front of all the others. He attacks his visitor, who wrings the gull's neck and throws him down. The bird-people gather in crowds and attack the man. They shoot at him with their wing-feathers, but he snatches a club and lays low hundreds. Then he returns with his wife and child in the same lid-covered canoe.¹

In another version the bird-husband is a powerful eagle-shaman, and is overcome only with the aid of other bird-shamans,—the tern, the raven, and the hawk.² This eagle-shaman appears frequently in Chukchee tradition, and sometimes has the character of the thunder-bird, or even of the ruler of the world. The eagle, by the way, even at the present time, is protected by taboo, and to kill him is believed to bring tempest and bad weather.

This whole tale closely resembles the Eskimo story of "Ititaujang,"³ only the end is different. The episode of geese-women bathing in a lake, however, is known all over the world, and forms one of the common nursery tales of civilized countries. The incident of birds shooting with their wing-feathers occurs also among the Indians of the North Pacific coast.⁴ In Eskimo tales

¹ *Chukchee Materials*, p. 290.

² *Ibid.*, p. 294.

³ *Boss, Eskimo of Baffin Land*, p. 179.

⁴ *Ibid.*, *Indianische Sagen*, p. 89, and *Tsimshian Texts* (Bulletin, Bureau of Ethnology, 1902), p. 114.

the canoe made or given by the old man is usually a fishbone. In one Alaska version, however, it is a king-salmon, hollow inside.¹ The old man bids the man enter it, and then shuts it. This is much more like the Chukchee incidents. The ten pairs of new boots filled with provisions, that the hero takes when leaving for a long journey, often occur in Chukchee tradition. In the Eskimo tale of "Kiviuk,"² they are replaced by several pairs of new mittens to be worn on the proposed journey. Both versions may have sprung from an episode in a wide-spread Old World tale, where the hero, when starting in search of his wife or bride, orders three pairs of iron boots, three iron hats, and three iron staffs, which are to serve him on the journey. In a tale from Lower Fraser river, the hero going after his wife makes for himself a hundred pairs of boots for the journey.³

There are some other incidents that evidently originated on the mainland of Asia and were carried to the west shore of Bering sea and farther on to America. Such is the reviving of the dead by sprinkling them with the water of life, after which they usually sit up and remark on their prolonged sleep.⁴ When this water is mentioned in Chukchee tales, it is often stated that it is carried in a tiny bottle—a circumstance evidently taken from tales of the Old World. The bottle, which was quite unknown in ancient Chukchee culture, is described as "something like a fish gall-bladder" (*Énnit-llli-wikrr(n)*).

4. A party of five girls, four of whom are small and the fifth grown up, walk around seeking food, and find a large house. Instead of dogs, four large bears are tied in front of the door. A *kille* comes out and invites the girls to enter. Then he offers them the best of various kinds of food. At night he wants the youngest to sleep in his bed, and promises to keep her warm, but

¹ Francis Barnum, *Grammatical Fundamentals of the Innuvit Language*, "Story of the Stolen Wife," p. 292, col. 2, § 4.

² Boas, *Eskimo of Baffin Land*, p. 185.

³ *Ibid.*, *Indianische Sagen*, p. 41.

⁴ *Ibid.*, p. 196.

instead he devours her. In the morning, while he goes out to hunt reindeer, the girls take flight. He kills a hundred reindeer and carries them home in a single load. "Where are the guests?" asks he of his household utensils. "Gone!" hisses the lamp. "Could you not hold them?" retorts the *kile*. "Where is the line-worm?" he asks. A large red dew-worm starts in pursuit, head foremost: his tail is tied to the lamp in the sleeping-room, but he is long enough to go out in search of them. The *kile* conjures up a gale and a snow-storm, in which the fugitive girls lose their way. Finally they are overtaken by the giant worm, and driven back to the *kile*'s house. The *kile* eats another girl, then still another. The largest one is left till the last. She implores the *kile* to let her live. She says, "I will be a slave to you. My mother told me, 'Grow up as fast as you can! Yonder lives a *kile* who wants woman's assistance. We will send you to him!'"—"No!" he replies, "I want to taste of your soul!"—"At least make me fatter! I am too lean," insists the girl. He consents, and for two days feeds her with the best of his supplies,—reindeer tallow, sausages, and dried fat. On the third morning the girl says, "I want to go out. Don't worry if I don't come back soon. I am so fat that I have trouble in emptying my bowels. Give me your knife, too; I want to cut off some scraps of soft skin for my use." The *kile* gives her the knife, but ties her to a strong line. Once outside of the door, the girl cuts the line in two, ties the other end to a hummock, and flies straightway to her village.

"Why has she not come back yet?" thinks the *kile*. "Probably she is too fat, and unable to make an exertion. It is time to eat her." At last he finds out that the girl has gone, and again sends the line-worm after her. But she cuts its head off with the *kile*'s magic knife. Blood gushes out, and the *kile*, seeing the worm's tail becoming quite bloodless, unlashes his bears and sends them after her. The girl meanwhile has met five men with spears, who kill the pursuing bears. The *kile* goes himself, and

finds her in the house. He thrusts his head into the sleeping-room; but a shaman who lives in the house stabs him with a blea-berry twig.¹

This tale may be compared with the story of "Igimagajug."² The stuffing of the human clothes with moss or heather, which occurs in the latter tale, reappears in another Chukchee story,³ in which it is told that some girls are caught by a *kllE* and hung in a bag on a tree; but a fox-woman passing by saves them by letting down the bag and filling it instead with moss and leaves. (In another version she fills the girls' clothes with moss.) The *kllE*, arriving later on, lets down the bag and stabs it with his knife, then takes a bite, but finds pricking twigs instead of soft flesh.

The most characteristic version of this tale belongs to the Kamchadale, where Kutq's wife hangs some little mice in a bag on a tree. The fox lets down the bag by repeating her incantation by which she made the larch-tree bend down. The stuffing of clothes with leaves occurs also in other Chukchee tales in connection with the same cannibal *kllE*; but the stuffed figure is always suspended in a bag.

5. Eight men travel in a boat, visiting distant countries. Among other circumstances it is related that they reach a country where large masses of boiled reindeer-meat are piled up near the shore. They want to eat of it; but the inhabitants deter them, exclaiming, "Do not eat it! It is dirt!" They enter one of the houses and are treated to the choicest fat, kidneys, and dried tongues. The occupants, however, do not partake of the meal. They have no anuses, and explain that their method of taking food is to inhale the steam of boiling broth, after which they throw away the meat. But the new-comers eat with so much relish that one of the villagers is tempted to imitate them. He

¹ *Chukchee Materials*, p. 94.

² *Boas, Eskimo of Baffin Land*, p. 312.

³ *Chukchee Materials*, p. 400.

takes a small bit, finds it to his taste, and finally takes a hearty meal. In due time, however, he feels very uncomfortable and begins to shout, "My buttocks prick me!" Then the oldest of the travelers takes a chip and thrusts it through his breech, thus making an anus for him. The others, at their request, are furnished with anuses too. This tale belongs to the Russianized Yukaghir of the Kolyma, and is identical with an incident of the tale of the "Origin of the Narwhal."¹

6. In the same tale the travelers find a large trunk of a tree standing upright in the middle of a bay. Every little while this trunk bends, and is submerged in the waters. After a while it stands up, glistening with fish that are caught on each of its short sharp boughs. This trunk is lord of the place. It has several wives living on the shore, and provides for them by its fishing. The log as husband of two women occurs also in tales of the eastern Eskimo² and, besides, in a Tlingit tale.³

7. A man starts with reindeer (or eight men start in a boat) to visit distant countries. On the other side of the sea he finds a large village. The house of the strongest man stands nearest the beach; but the visitor calls at the poorest house, the owner of which has not even anything for supper. The strongest man of the village is very severe upon his neighbors, and feeds them like slaves. If they do not submit to his orders, he cuts short their supplies and strikes them with a stick. The visitor is called to the strong man's house, and in the morning a wrestling and fighting contest is proposed. The contest takes place on a walrus-hide, which is well greased to make it slippery, and into which sharp bone chips are stuck. The visitor wins, and wrings the neck of his adversary. The inhabitants of the village rejoice, because their oppressor has been punished. They divide with the visitor all the riches of the strong man. The visitor frees

¹ Boas, *Eskimo of Baffin Land*, p. 170.

² *Ibid.*, *Central Eskimo*, p. 623; *Eskimo of Baffin Land*, p. 185.

³ *Ibid.*, *Indianische Sagen*, p. 326.

many female prisoners who were kept in the house of the dead man; and they all go to their respective countries.¹

The contest reappears in several Chukchee tales. Sometimes it is the whole crew taking their turn, with fatal issue; the host wrings their necks, or else thrusts them through a whale's vertebra and thus scrapes off all the flesh from their bones. Or it is the oldest woman of the village, who kills them with dead men's fingers, throwing a finger on every man, — pieces of a corpse being considered very effective charms. But the last of the crew overpowers the host and thrusts him, in his turn, through the fatal hole, or kills the hag and then revives his companions by means of a magic head-band, to which are tied several wooden protecting manikins, corresponding to the number of men in his crew. The version of the story of the wrestling-contest on the skin reminds one of the tale of "Tiggak,"² and especially of the tale of "Ak'-chik-chú'-gúk."³ In another Chukchee tale the deadly chips are simply stuck in the ground. Chips stuck in the ground or set in a plank for the purpose of wounding a new-comer frequently occur in Indian tales.⁴ The reviving of killed companions after a fighting-contest is repeated in the Shuswap tale of "Tleesa."⁵

8. Eight brothers went to sea in a boat, leaving the ninth, the youngest one, at home. He went angling. The giant Lóhhlén went by and took him to his house for his child to play with. But after a while the man began to grow. He gradually reached the same stature as the giant, and became a Lóhhlén. The brothers returned, but could not find him, and began to shout, calling his name. At last he came, took them with their boat, and placed them on top of a mountain, where they may be seen as stones to the present day.⁶ I obtained this tale among

¹ *Chukchee Materials*, p. 343. Compare Rink, *Tales and Traditions of the Eskimo*, No. 10, pp. 132-143.

² Rink, loc. cit., p. 165.

³ Nelson, loc. cit., p. 499.

⁴ Boas, *Indianische Sagen*, p. 360, § 151.

⁵ *Ibid.*, p. 2.

⁶ Compare Rink, *Tales and Traditions*, "Visit to the Giants," p. 430.

the Eskimo at Indian point. In the Chukchee version the giant goes to sleep on the shore, and does not wake till the next spring. One of his cheeks is covered with ice, and injured by polar bears; but when he awakes, he only scratches the sore and declares that the country is mangy.¹

9. Three brothers, after several adventures, come to a village of some unknown people. The youngest enters one house and sees a blind old woman sitting near the hearth. He cannot refrain from mischief, and noiselessly steps up to her, and, producing his penis, points it straight at her nose. Her nostrils begin to twitch, and she exclaims, "I perceive the smell of a husband!" Then the man cannot contain his laughter. The old woman gets angry, and, with one short incantation, causes his penis to grow continually. They have to cut off part of it and throw it into the water, because its weight is too heavy for the boat. But the elder brother makes a counter-charm, and awakes in the old woman an insatiable sexual desire. She tries finally to satisfy it with a sharp stick, and kills herself.²

10. A dog went courting a girl. He rubbed his body with alder-bark, so that his groins became red. He said to his host, "This was done by thy daughter's legs!" The old man bade the girl marry the dog, who took her to his home. The dog's mother came out, holding a burning stick in her mouth; but the young woman kicked her back, saying, "This old bitch wants to burn me!" Some small pups jumped out, yelping for joy, but she struck them too. Then the dog drove her away and tried another girl whose temper was sweeter. From the bridal feast she took along some fine meat, and, when the pups came to meet her, she gave them small pieces. She spoke kindly to the old bitch. The husband bade her to enter the house with closed eyes. Re-opening them inside, she found a handsome sleeping-room covered

¹ *Chukchee Materials*, p. 176.

² Collected among the Chukchee, 1901. Compare Boas, *Eskimo of Baffin Land*, p. 203; also *Indianische Sagen*, p. 118.

with white reindeer-skins, and by her side sat a fine-looking young man. The dog family had a large reindeer-herd that increased rapidly, for the tireless canine legs made the owners excellent herdsman. From that time on they began to multiply and became a tribe.¹

This tale is quite popular among the Chukchee. In another version, the descendants of the dog and the woman assemble in a deserted house and begin to perform the autumnal ceremony of the reindeer sacrifice with howling instead of songs. A young girl peeps through a crevice and afterward tells the neighbors, who come with sticks and drive out the dogs. These flee to the west, and part are transformed into men, and become the Russians; while another part put on harness, and become team-dogs.² The end of the second version resembles the end of the Eskimo story, where the dogs become the ancestors of the Qavdlunait,³ or Ijigat, or any other people. The characteristic Eskimo detail about the dog-man dragging the woman along after copulation⁴ appears in another Chukchee story connected with the Raven myth.⁵

In other stories of the Chukchee and Eskimo, the treatment of the theme is very much the same, and the general resemblance is striking; but many of the characteristic details of the Eskimo stories have disappeared in the Chukchee versions, and vice versa. While a single case of such similarities would not afford sufficient evidence of diffusion of tales, the whole mass is so extensive that it offers convincing proof of the strong ties between Eskimo and Chukchee folklore.

II. A mangy orphan boy lives quite alone in the poorest hut of a maritime village. He finds a hungry old woman and asks

¹ *Chukchee Materials*, p. 108.

² Compare Bons, *Eskimo of Baffin Land*, p. 165.

³ Rink, loc. cit., p. 471.

⁴ Bons, *Eskimo of Baffin Land*, p. 166.

⁵ See postea, p. 650.

her to live with him. "You shall be my grandmother," he says. (In another version, his grandmother lives with him.) They have nothing to cook. At last a whale drifts ashore. She sends him to the people, saying, "Go and ask for some meat, if only from the tail." The villagers are returning home with heavy loads of meat; but nobody wants to share with the mangy boy, and he is scoffed at and beaten everywhere. At last the Outer Being¹ takes compassion on him, and some unknown people give him three small scraps of whale-meat, enjoining upon him to put them into one of his mittens, and then, on coming home, to put these three pieces in three underground larders. After a while the larders are filled with meat. Then the grandmother sends him to seek a bride. He goes from one village to another, but everywhere is rejected with derision and scorn. He comes back, and the Outer Being commands him to run around his house. Gradually the soil is mellowed and he sinks into it, at first knee-deep, then thigh-deep, then to the navel, and so on. His body becomes clean and strong, and he is transformed into a well-shaped young man, the best hunter of the village. Out of the ground appear three large bags filled with choicest clothing, costly furs, and other riches. He takes for wife the prettiest girl of the neighborhood. The girls who rejected him now want to have him for their husband. But now he rejects them. The neighbors crowd around him, saying, "You are my nephew, you are my cousin," but he beats them and retorts, "Even so you have beaten and ill-treated me!" Finally he leaves the village and settles in another place. The villagers are unsuccessful in their hunting, and are swept away by famine.²

This tale is widely spread among the Chukchee. There is also another somewhat similar one, about a small seal that went seeking a wife, but was rejected and ill-treated everywhere.

¹ See *antea*, p. 587.

² *Chukchee Materials*, p. 116. Compare Rink, *loc. cit.*, "Kagsagsuk," p. 93; and Ross, *Central Eskimo*, "Qaudjaqdjuq," p. 630.

Some young girls maltreated him, cutting his back and putting burning coals under his skin. At last one girl felt compassion and took him for her husband. In the night he turned into a handsome man and caused a large reindeer-herd to appear at his bride's house. Finally all the women who formerly had ill-treated him wanted to have him, but he struck and rejected them all.¹

12. After a great famine there were left in a village only a little boy and his sister. They had nothing to eat. He made a small bow and the sister made a drum. He began shooting and she beat the drum. Next morning he killed a mosquito. She went on drumming. On the next day he killed a gadfly; and on the third day he shot a small bird, which they roasted and ate. On the fourth day he killed a wild duck, which they also roasted and ate. Next he shot a hare, then a fox. After a while he grew up; then he killed a reindeer, then an elk, and he went on killing every kind of big land and water game,—bears, walruses, seals, and wolverines. After some adventures he went traveling and saw a large dwelling cut out of solid rock. He entered through the vent-hole and saw a giant-woman busy around the hearth. The pot was on the hook, but no meat was to be seen. The house was full of children who kept crying and asking their mother for food. She said, "Wait a little! We shall taste this man's liver!" She spat on the opening and made the rock shut. Then she sharpened her carving knife. She cried, "Come here! I will skin you!" "I will not!" answered the man. She got angry and flung the knife at his head. He had on his magic head-band with small manikins carved out of wood. The knife struck one of them and cut off his head. Then the guest caught the knife, flung it at the woman, and cut off her right hand. Next she threw it at him with her left hand, and again struck a wooden manikin. Then the guest threw back the knife and cut

¹ *Chukchee Materials*, p. 283.

off her left hand. The third time she flung the knife with her teeth, and, when throwing it back, the man cut off her head. After various adventures he came to the land of darkness, where he visited another giant-woman, with whom he had a contest. Without a single word she caught him, chopped him to pieces, and put him into her pot. In due time she took out the boiled meat and carried it in a tray to her sleeping-room. Behold! there the guest sat on a skin that was spread out on the floor. She caught him again, put him on a pile of wood, and burned him to ashes; but when she entered her sleeping-room, she found him again sitting on the skins. She caught him a third time, took him outdoors to her larder, and drew out the skin stopper. In the bottom of the larder was fastened a *kille-dog* that she fed only twice a year. She put the man into the larder and refastened the stopper. Out of the pit there was heard a noise,—a grunting, a grinding of teeth, and a snapping of the mouth. But when she reached her sleeping-room, she found the stranger again sitting on the skins. Then she lost patience, put him out of the house, and shut the entrance; but at midnight he came back, mounted the roof, and through the vent-hole stole her heart and intestines out of her body. The next morning she felt uneasy on account of the absence of these organs, and had to acknowledge his victory; but the man refused to return her intestines unless she consented to marry him.

Some parts of this tale recall the Eskimo tale of "Kiviuk"; but the pernicious old woman appears in many other combinations, in Asia as well as in northwestern America. In one of the versions belonging to the Chukchee of Anadyr, the man is invited to enter the house by a young woman who wants to have him for a husband. But when they lie down, he sees something glistening in the dark, and discovers an old hag approaching noiselessly with a knife in her hand. She is his new wife's mother, who procures food by killing strangers. The young woman assures him that it is a dream. Finally he kills both with their own knife and

escapes. This story resembles the Kiviuk story more closely than the former version.

13. In a Chukchee tale, two children carried away by a cannibal escape through a hole in the roof. The sister first helps the brother through, then follows herself.¹

In a Koryak tale the she-giant carries away children in a basket, alluring them with toys; then she eats them. Warriors are seen afar in white armor. A boy and a girl who are still alive begin to sing, "There come white armor-clad men to look for us!" Several times the giantess asks what they sing; but they elude her watchfulness and are carried away by the men.²

In a tale of Russianized natives of Anadyr, probably of Chuvantzy stock, which is curious because of the remnants of some unknown words inserted as a song, and quite incomprehensible at present to the people, a giant woman comes to the dwelling of a human couple. She is called by the North Siberian (Russian) name *Yagis'na*, which is derived from *Baba-Yaga* ("grandmother Yaga"), a well-known name in Russian tales, and perhaps an ancient Slavic female deity. *Yagis'na* signifies in Russian "Yaga's daughter." *Yagis'na* of Anadyr, approaching the threshold of the human dwelling, begins to sing, probably in the Chuvantzy language, "*Ke, ke, ke! čomūnda galūnda, bātšina dēka, čomūnda ritika!*" The owner of the house is so lazy that he always lies on his bed. On the arrival of *Yagis'na*, his wife induces him to arise. He seizes his bow and begins to shoot at the giantess. His arrows, however, fall down without piercing her hard skin. She continues to sing, "*Ke, ke, ke! čomūnda galūnda, bātšina čalik, čomūnda rindlik!*" By the advice of his wife the man takes aim at her buttocks. The arrow enters her anus and comes out of her mouth, thus killing her. They are unable to cut up her body, and finally burn it on a pile of wood. Then they follow

¹ Compare Boas, *Eskimo of Baffin Land*, Mangegjatuakdja, p. 189.

² Compare Boas, *Indianische Sagen*, K'alk'alo-iti, p. 57, and several others.

her tracks and come to a large house, but at first find no one inside, until the man stumbles over a huge dish which is lying bottom upward on the floor. A number of the giantess's children jump out, exclaiming in the same unknown language, "*Mama ta kakečd, mama ta vakečd!*" The assailants slay the children, burn the house, and take home all the goods of the giantess.

The last three tales recall the Indian tale of "Sneneiq." It is remarkable that, while most of the Chukchee tales of the giant-woman are more or less related to Eskimo tales, those of the Koryak and of the Chuvantzy (belonging to the Yukaghir stock) should bear resemblance to those of the Indian. In the third part of this paper I shall refer to similar instances.

14. Some details of the Kiviuiq tale, besides those mentioned, appear in many other tales of the west coast of Bering sea. The incident of the old woman who, pretending to louse her daughter, kills her by driving a peg through her ear, and then puts on her skin, is found in Asia. For instance, in a Chukchee tale, a woman abandoned by her husband for the sake of the "girl of the mountain voice" (echo) finds her rival, offers to louse her, and, after lulling her to sleep, pours into her ear some boiling broth of reindeer kidneys.¹

Other episodes of this tale closely resemble the Takuka tale of the Alaskan Eskimo.² The false husband is considered dead by his wife. For a long time she painfully supports her children by gathering roots. Then she finds, by accident, her rival's house, and, after killing her with broth, puts her body on the cliff in a position as though she were living, and goes home. The husband, returning with his catch, scolds his wife for not coming to help him, but soon discovers that she is dead. He guesses what has happened, and sets out to take vengeance. The woman, when attacked with a spear, suddenly turns into a bear, breaks the spear, and kills the man. She comes to the house to look at her

¹ *Chukchee Materials*, p. 258.

² Nelson, *loc. cit.*, p. 467.

children, but they are frightened and run away. One becomes a wolverine, another a fox, the third one a wild duck, the fourth a snow-bunting. Among the Asiatic Eskimo I collected another version resembling still more closely the Alaskan tale.

In another tale collected among the Chukchee, but probably of Koryak origin, the Black-beetle-woman, pretending to guard her female companion from an attempt at abduction, kills her, puts on her skin, and marries the Sun, but finally is discovered by the Sun and burnt to death.¹

15. In several Chukchee tales, as well as in the Eskimo tale of "Kiviuk," the hero, on his return home, is startled to find his small child grown up and become a great hunter. In one Chukchee tale the hero and his brother come back to their village, and, meeting two gray-haired old men, begin to inquire about their children. After a while they begin to understand that these men are their children, and immediately fall to the ground senseless. Two wagtails fly away from their bodies, and nothing remains but a little dust.²

16. A mother went to sleep in the outer tent with her infant. The child began to cry, but the mother slept so soundly that she did not hear it. The child continued to cry. His voice grew stronger, and he was gradually transformed into a *k'ile*, who devoured his mother. He wanted to devour all the other inmates of the tent; but they fled in time, leaving all their goods behind.³

In a version of this tale collected among the Russianized Yukaghir of Kolyma, three sisters, who wish to have a child, find among the rocks a stone similar to a human form. They take it home, lay it in a cradle, and in a short time it becomes a real child. They are good hunters, and their storehouse is filled with dried reindeer-meat. In the morning, when they go away hunting, the stone-child rises out of the cradle with the incantation,

¹ *Chukchee Materials*, p. 176.

² *Ibid.*, p. 188.

³ *Ibid.*, p. 27; Rink, *loc. cit.*, p. 258.

"Chumo, chumo! May you grow big!" He becomes a giant, and eats all the meat and fat. Finally the sisters discover who devours their stores, and they hurry away from the monster. The giant-infant gives pursuit, but, after the three well-known episodes of the magic flight, is drowned in a fiery river. The girls come to a real river and want to cross it. Seeing on the other side an old hag, they ask her assistance, and, on their promise to give her their ear-rings, the old woman stretches her right leg across, and the girls cross upon it as upon a bridge.¹

In a Yukaghir version, a child-monster has long iron teeth. The inmates of the house escape to the high storage platform which stands on four solid wooden supports. The child-monster begins to gnaw these supports and succeeds in breaking them down. In other tales they are turned into iron through a magic incantation of one of the men who had escaped to the platform. The supernatural being, suddenly transformed from the simple human form, having long iron teeth and using them to gnaw at the supports of the platform to which his former housemates have escaped, is a peculiar figure of Yukaghir folklore, and frequently appears in Russian tales from the Kolyma, which are influenced by native tradition. It is also mentioned in one Koryak tale, but I do not remember to have heard of it among the Chukchee.

17. The magic flight deals usually with three magic objects: a comb, which is transformed into a forest; a small stone, which is transformed into a mountain; and an object connected with fire, —for instance, the steel of a strike-a-light,—which is transformed into a river of fire. All of these not only occur frequently in Chukchee traditions, but are even used as charms in funerals; when mountains are raised from little stones, and deep rivers

¹ Boas, *Chinook Texts*, Bulletin Bureau of Ethnology, p. 32; Boas, *Kathlamet Texts*, *ibid.*, 124; L. Farrand, *Traditions of the Quinault Indians*, Memoirs American Museum of Natural History, IV, p. 120; R. B. Dixon, *Maidu Myths*, Bulletin American Museum of Natural History, XV, p. 80; J. Curtin, *Creation Myths of Primitive America*, p. 450.

spurt from lines drawn on the ground with a stick in order to prevent the deceased from coming back.¹

18. The Sedna myth² does not appear in its complete form in the Chukchee tradition; but one of the most widely known episodes of the Raven myth of the Chukchee is often connected with incidents resembling some parts of the tale of "Sedna." The Raven wants to obtain the sun, which is in possession of a *kelle*. He goes to a distant country and finds a house which swings to and fro. He enjoins upon it to become steady, and waits outside. In the house, sun, moon, and stars are kept sewed up in black walrus-hide, like large balls. The young daughter of the *kelle* goes out, and is induced by the Raven to tease her parents for the sun-ball. The girl asks for it; but her father gives her the ball of the stars instead. She plays with it, and, when she throws it to the Raven, he contrives to toss it upward with such strength that it bursts, and the stars fly out and stick to the sky. In a similar way he succeeds in freeing the moon, and finally the sun. After that the father becomes angry with his daughter, and he takes her and hangs her, head downward, from a steep cliff. At last the line snaps. She drops into the water, and turns into a walrus, whose tusks are formed of the mucus that ran from her nose when she was weeping.

In another version she is thrown overboard from a boat and tries to catch the prow, but her father chops off her fingers. Then she sinks into the water and turns into a walrus, the tusks being formed of her braided hair. Ultimately she upsets the boat and drowns her father.

Among the Eskimo, Sedna is believed to rule the depths of the sea. The Maritime Chukchee believe that on the bottom of the sea lives an old woman, with a walrus-head and two large tusks, who is the owner and the ruler of the sea-game. In recent years

¹ For magic flight, compare Boas, *Central Eskimo*, p. 619; *Eskimo of Baffin Land*, p. 177; and *Indianische Sagen*, p. 356, No. 55.

² See Boas, *Eskimo of Baffin Land*, pp. 119, 163.

one of her tusks has broken in the middle; for this reason her temper has grown worse, and year by year less game is allowed to come to the surface. Nothing, however, is known about the relations existing between this "mother of the walrus" and the *kile's* daughter of the preceding tale.

The father of Sedna, who is believed to be a small man,¹ bears resemblance to the deity of land-game of the West Bering Sea tribes, which is called "Pičvúčín" by the Chukchee and the Koryak, and "Piláhčuč" by the Kamchadale. He is a dwarf, not larger than a man's finger, though endowed with the strength of a giant. He drives a small sledge of grass with a team of mice; sometimes he himself has the shape of a mouse, and his reindeer is the small edible root of *Polygonum viviparum*. In Kamchadale tales he is Kutq's son-in-law. Pičvúčín is the owner of all foxes, wolves, and especially of all kinds of wild reindeer, and is usually kind to men, and sends them some of his game. But the slightest neglect of the proscribed hunting customs is apt to anger him, and he withholds the supply.

19. The idea that thunder is produced by girls playing above on a spread sealskin, and that rain is the urine of one of them, is well known to the Chukchee; but it seems to me to be borrowed from the Asiatic Eskimo, who have a tale on this subject.² In one Chukchee tale the lightning is a one-sided man who drags his one-sided sister along by her foot. She is intoxicated with fly-agaric. The rattling of her back is thunder, her urine is rain. . . . The winds have a mistress, an old woman who lives on the northern border of the sky. She makes snow-squalls by shoveling the snow from her own dwelling.

20. Some of the tales from Baffinland are related to various episodes of the versions of the Raven myth from the west coast of Bering sea. In one Chukchee tale, the Raven, who wants to travel to the Land of the Winds, leaves the sleeping-room and

¹ Boas, *Eskimo of Baffin Land*, p. 163; *Central Eskimo*, p. 586.

² Compare Boas, *Eskimo of Baffin Land*, p. 175.

calls for dogs to come. Two reindeer come, but he says, "Go away! I don't want you!" After that polar bears, wolves, and elks come, but are sent away by him. Then two small white foxes come, and are put into harness.¹ In the Baffinland tale, many foxes are induced to come into the house, where they are finally slain and skinned. The same incident occurs in several tales of the Chukchee, Yukaghir, and Koryak.

In a Koryak tale the Whitewhale-man, Sisísan,² goes with his sister Réra to hunt reindeer. They find one; but Sisísan's arrows are too short. He is afraid that if he should use them, the agony of the reindeer might be so prolonged as to cause it to lose its fat. But, when longer arrows are fetched from the house the reindeer is gone. Then they find a river, and Sisísan, using his sister's breeches as a seine, catches a great many fish. After a while Réra and Yínéa-néut³ go out to dig roots. They find a house in the country and enter it. It is the house of the foxes, and Réra is married to the Fox-man, who is clad in a long red overcoat. The bear, who is in the foxes' house, embraces Yínéa-néut, and presses her so hard that she breaks wind. Réra bears first two fox-pups, then thirty more, then sixty, then a countless quantity. After a while the whole clan of foxes go to visit Kutq's family. Sisísan welcomes them, but they are so many that the house is entirely filled with them. He treats them to some fish; but all his stores prove insufficient to supply even a single fish to each fox. In the night the hungry foxes gnaw off several people's noses and ears, and also Sisísan's penis. But he cures the wounds by applying a little seal-oil, kills all the foxes, and fills two store-houses with their skins.

21. In a widely known Chukchee tale, the Raven wants to feed visitors. He sends his son to bring some game. What he brings is really only the half-rotten body of a dead pup. Then

¹ Compare Boas, *Eskimo of Baffin Land*, p. 215.

² See p. 638.

³ *Ibid.*

he sends his son for some food that is more slippery, and the boy brings some fresh excrements. After that the visitors go away in wrath, and the Raven consumes everything himself.¹

22. In a Koryak tale a Fox-woman marries a Raven-man. He complains of her bad smell. She becomes offended, and goes away into the open country. He follows her, and after much trouble finds her in a hole in the ground, where she has given birth to a pup. Then they become reconciled, and agree to live together² in the underground house.³

23. In a Kamchadale tale the Raven's wife, Miti, sits down before the window to mend her coat, but the window is darkened by some mice which drive by in sledges. Miti, supposing her nose to be in the way of the light, cuts it off, then disposes of her lips and cheeks in the same manner.⁴ Later on I shall refer to these episodes more fully.

24. The reindeer proposed a pulling-match to the walrus (in another version to the thong-seal). "I shall certainly drag you into the water," boasted the walrus. "Try and see," answered the reindeer. They tied a strong rope around their waists and began to pull. The reindeer proved stronger, and dragged the walrus far away into the country.⁵

25. An old woman lived with her niece, and wanted to have some fun with her. So she split her stone-hammer in two, making for herself, of the two halves of stone, and of the wooden handle, the private parts of a man. She pretended to be a man, and came to court the young woman; but when they lay down, the young woman felt of her husband's legs and discovered the deceit.⁶

In one of the episodes of the Raven myth, the Raven pretends

¹ Compare Boss, *Eskimo of Baffin Land*, "The Raven and the Gull," p. 216.

² *Ibid.*, p. 225.

³ *Ibid.*, p. 193; *Central Eskimo*, p. 624.

⁴ Compare Boss, *Eskimo of Baffin Land*, "The Bear and the Caribou," p. 220.

⁵ *Ibid.*, *Eskimo of Baffin Land*, No. 54, p. 248, and No. 24, p. 324; compare also, *Indianische Sagen*, etc., p. 28.

to be a woman, transforming his penis into a needlecase, and the pubis into needles. Then he marries a Reindeer Chukchee man. Such transformations are not so surprising to a native mind in the land where male and female shamans, by request of their spirits, take up the mode of life of the opposite sex, and even go so far as to practise sodomy and to exhibit other forms of sexual perversion.

26. Two *ukkmaks* (wooden amulets rudely shaped like human figures) turned themselves into men and visited a camp where a ceremony was being held. They entered the poorest tent, where an old man with his wife wailed in a song over the loss of their only son. The visitors began to sing together. Their song was so attractive that all the people from the other tents came to listen. Some mounted the roof; others made holes in the tent-covering and peeped in. They saw how the antlers of the sacrificed reindeer transformed themselves into a large buck, and walked around the hearth. Finally the roof gave in, and the people fell down and crushed the singers, who at once assumed their original shape.¹

27. Several tales of the Chukchee treat of the ancient tribes who lived on the shores, but were obliged to withdraw. In the arctic tale about Krë'qay's flight, which is referred to also by Wrangell, these people are described as real men who fled across the sea to some unknown land in order to escape the vengeance of their neighbors.

In other tales they are *kellet*, who lived visibly on the earth, were of large stature, but of inferior material culture. After a long war they were vanquished by the Chukchee, and then withdrew to the land of spirits and became invisible.

The American Eskimo have similar stories about the so-called "Tornit." It is curious that some of the traits of Tornit culture, as described by the Central Eskimo, actually occur among the Chukchee on the Asiatic shore. I will give a few examples:

¹ Compare Rink, loc. cit., p. 219.

(1) The Maritime Chukchee and, following their example, the Asiatic Eskimo, are fond of athletic exercises, among which the carrying of large stones is a favorite one. Young men own long round stones which are picked out and kept for this purpose. (2) The heavy winter coat of the Chukchee reaches to the knee and is so wide that a man can easily pull both arms out of the sleeves, and then turn quite freely under the coat. (3) They do not build any snow-houses, but in olden times lived in underground dwellings, the roofs of which were supported by whale-ribs.¹ (4) The skin of the polar bear and half of the whalebone of a whale drifted ashore belong to the person who discovered them. The Eskimo say that this is the custom of the Tornit.² (5) When killing a seal in its breathing-hole they whisper, "*gik, gik, gik! ktrñd-takdñhn qāyñewhun!*" ("Ah, ah, ah! Call here your elder companion!") The Tornit whispered, "I shall stab it."³ To be sure, all these coincidences are trifling; but, nevertheless, I thought it worth while to mention them here.

28. Another Chukchee tradition refers to the so-called "Stealthily-walking-around-people," otherwise called "Twilight Lamut." Long ago these were also driven across the sea, but they continue to come back and walk about at night time. From time to time a Chukchee hunter may have a chance to shoot one of them, when they are "seen against the sunset." Their bodies are quite ordinary, except that the feet are uncommonly large and have webbed toes. They are excellent swimmers, and, when cornered by men, jump into the foaming sea from a high cliff and swim off to another shore. This tradition somewhat recalls to mind the Kalopalit of the Central Eskimo,⁴ with their large feet and their great skill in swimming.

29. In a tale of the Russianized natives of Kolyma, a grand-

¹ For similar details in the description of Tornit, see Boas, *Central Eskimo*, p. 634.

² Boas, *Eskimo of Baffin Land*, p. 311, footnote.

³ Boas, *The Central Eskimo*, p. 635.

⁴ *Ibid.*

mother, angered at the disobedience of her grandson, requests Owner-of-the-forest to take him. The spirit appears immediately and carries away the boy.¹ The inhabitants of the village vainly endeavor to recover the boy. After many years he makes his escape by means of charmed boots, which he steals from Owner-of-the-forest. They are made of the thick white skin of Master-of-the-river. Owner-of-the-forest, whenever he needs this kind of skin, hunts Master-of-the-river with the harpoon. When he has killed him, he immediately flays him. Master-of-the-river, on his part, catches by his feet Owner-of-the-forest and any members of his family, when they are crossing rivers on the ice, and drags them down. The boots made of the skin of Master-of-the-river make four miles at every step, and therefore are called "fourfold boots."

30. A bear tale found among the Chukchee and Russianized natives of Anadyr resembles Nelson's "History of the Giant."² The bear, gives protection to a woman who is driven from her home. He makes her a present of a number of ear and nose tips cut from various skins, and sends her back to her husband. She produces the gift, and the bits of skins are transformed into handsome peltries. Her husband immediately restores her to her former position and turns out her rival. He calls together all the men of the village and gives presents to them. They live rich and happy ever after.

31. The following story seems to me without analogue in America, but may have a historical background based on trading expeditions to the arctic coast of America. A man wanders away over the sea-ice and finds a snow-dwelling of a Polar-bear-woman, whom he marries. He takes her home. After a while she quarrels with her mother-in-law and leaves, going with her child to her own country. When she reaches open water, she puts the child in one leg of her breeches and crosses over. The

¹ Compare Boas, *Central Eskimo*, p. 620.

² Loc. cit., p. 471.

man starts in search of his wife, wanders across the sea-ice, and finally reaches the country of the polar bears. There he is reconciled to his wife, but has to fight a number of matches with a giant monster-bear, Kočátko.¹ They play ball with a walrus-head, which comes to life when tossed, and kills everybody who tries to catch it. The next day they slide from an iceberg and plunge into the water to bring up a stone from the bottom. The hero succeeds, taking an occasional breath through the blowing-hole of a seal. The bears kill seal and walrus; but a small lemming is considered by them a dreadful monster, and the hero wins much applause in killing two lemmings with a mitten. After his triumph over Kočátko, the hero lives with the bears for many years, but finally, by accident, kills one of his brothers-in-law. Then his wife suggests immediate flight, and offers to take him across the sea. When they reach the open water, she puts him into a leg of her breeches and carries him across. These large breeches of the Polar-bear-woman remind us of the hoop-trousers of the Eskimo women in Hudson strait that were formerly in use and in which their children were really carried.²

The polar-bear country calls to mind another Chukchee tale, where, among other strange people living on the shores of Kílmín (America), are described large-sized polar bears with human faces. They are said to be friendly to traders; and a good fox-skin may be bought from them for one pipeful of tobacco. This description seems to relate to bearskin-clad Central Eskimo, whose country the Russian leaf-tobacco reached more than a century ago. In the beginning it brought fabulous prices and was always coveted by the natives.

32. There are a number of Chukchee beliefs and customs more or less analogous to those of the Eskimo. The aurora borealis is believed to be a special world, inhabited by those who died by violence. The red glare is their spilled blood, and the changing

¹ See p. 579.

² Boas, *Eskimo of Baffin Land*, p. 336.

rays are deceased souls playing ball with a walrus-head.¹ Incidentally I will mention a curious belief connected with the aurora borealis: It is said that there is a large worm somewhere near the village of "the upper people." This worm is striped with red and is so large that it attacks large game. When hungry, it is very active; it will spring from ambush upon a wild reindeer, and will kill it by the pressure of its coils. It gulps its prey without chewing, since it has no teeth. After taking a meal it becomes motionless and sleeps for several days on the same spot; the children of the dead cannot rouse it, even by pelting it with stones. This is a very accurate description of a boa constrictor. The belief is apparently of ancient origin, because the monster is placed in the sky with the souls of the deceased. In northeastern Siberia no snakes are found, and it would seem, therefore, that this tale points southward to regions where large snakes live.

Head-lifting is one of the chief divining methods, not less among the Chukchee than among the American Eskimo. It is used for discovering a cure for sickness. It is employed on dead bodies for determining the details of the burial ceremony. It is also practised on anybody who wishes to learn about the future. Divining with a suspended object which is lifted, and the apparent weight or motion of which gives the desired answer, is also practised. The new-born child is believed to be some ancestor come back to earth. Its name is found by asking the suspended divining-stone all the names of the preceding generation, in turn.

The idea of the return of the dead in new-born children is so strong in the Chukchee mind that half of the proper names have relation to it; for instance, *Pilqantt* ("returned"), *Penelqut* ("the former one rising"), *Notalqot* ("rising on the field"), etc.

People who make themselves obnoxious are killed by their relatives by common consent.² Flesh from a corpse is supposed to be deadly poisonous, and preëminently fit for the most dangerous

¹ Rink, p. 37; Boas, *Eskimo of Baffin Land*, p. 146; Nelson, op. cit., p. 336.

charms. The company of dogs is thought to be the best preservative against evil charms and spirits. Artificial animals are sent to kill enemies; for instance, Wáal, on the Kolyma tundra, told me, with all details, how his own brother was killed by an artificial wild reindeer-buck which was sent against him in the early fall, and allured him to the bare ice on the lake, where he fell and broke his neck.¹ The skins of birds and of small mammals are used as protecting amulets for men and things, and are sewed to the objects to be protected.² A sick person can be cured by placing the aching part inside the belly of a reindeer; in an illness that is not localized, the entrails are pulled out of the reindeer, so that they form a loop through which the sick person must step.³ In the other world is a land of dogs, which is passed by the soul before it reaches the land of the shades. Whoever beats the dogs on this earth will be attacked and severely bitten by the dogs there.⁴

III.—COMPARISON BETWEEN THE FOLKLORE OF NORTHEASTERN SIBERIA AND THAT OF THE INDIANS OF THE NORTH PACIFIC COAST.

If one part of the West Bering folklore presents a striking resemblance to Eskimo traditions, another part is related to the Indian lore of the North Pacific coast, chiefly in the general character and construction of the tales, but also in several details. Most important is the occurrence of the Raven myth, which, on the Asiatic side, is not less prominent than on the American side, although there are many curious differences in its episodes.

The mythical name of the Raven is essentially the same in Chukchee, Koryak, and Kamchadale, except for certain phonetic

¹ *Chukchee Materials*, p. 24.

² For the Eskimo analogue of all these customs and beliefs, see Boas, *Eskimo of Baffin Land*, pp. 363, 364.

³ Compare Rink, loc. cit., p. 226.

⁴ Compare Nelson, loc. cit., p. 488.

changes characteristic of these dialects. The Kamchadale form seems to be the oldest, as the Kamchadale generally must be considered to be the oldest branch of this group of languages. The Raven's name is *Kutq* in Kamchadale; *Kútqi*, *Kútqiy*, *Kúsqil*, *Kúsqiy*, in the southeastern Koryak; *Kúykty* or *Qúykty* in the northwestern Koryak; and *Kúrkil* in Chukchee. In Koryak it is employed commonly in its augmentative form, *Kutqínnaku*, *Kusqínnaku*, *Kuykínnaku* (Big *Kútqi*). The character of the Raven is essentially the same as on the American side. He is the transformer, but not the creator, of the world. He brings light and fresh water, and teaches the human race the ways of earthly life, from copulation to the making of nets. At the same time he is the common laughing-stock, foolish and dirty, perpetrator of many misdeeds, and the object of various tricks. In several episodes of the myth his supernatural qualities are more or less skilfully blended with his ordinary features and faculties as a real bird, eating carrion and always hungry. These episodes frequently have obscene and dirty details, just as do those of North America. Some of the American episodes of the Raven tale reappear on Asiatic soil; others are peculiar to Asia, though quite similar to the rest in character and composition. Many of them are common to most of the Asiatic Bering sea tribes.

Among the Chukchee, notwithstanding the large number of Raven stories, they do not appear to be very prominent among the whole mass of traditions, since a large part of their folklore bears resemblance to that of the Eskimo. Another still larger part is epic, and relates to wars with neighboring tribes, while many other tales treat of separate subjects not connected with any of those mentioned above.

Among the Koryak, on the contrary, the Raven myth has a much greater importance. *Kuykínnaku* is a deity, and by older travelers that name was translated simply "God." He is

connected with almost every tale, and, even when it treats of a subject without any relation to the Raven myth, his name, at least, is mentioned in the beginning. In some Koryak tales, Kuykinnaku preserves the characteristics of the Raven as clearly as the Chukchee Kúrkil. In others, however, he has more or less lost them. He is the transformer of the world, the ancestor of mankind, the teacher of various pursuits, who, after making mankind fit to support themselves, goes away to another country or else turns into stone.

The Chukchee tradition knows also the Míti or Míti-ñe (ñe being abbreviated from *ñeut*, "woman"), the Raven's wife. The Koryak, besides these two names, knows their son, Emémkut; two daughters, Yiñla-ñeut and Čanái; Emémkut's wife, Kílú; in northern Kamchatka also Míti's brother, Sisisan (the Whitewhale-man). Other sons of Raven and Míti are Kigigčl-ñaku, Kuthánu, Kitiynaku, Vála, Milpútayan, their nephew Ílla, etc. Names of Kutq's family appear also among the Koryak names of the constellations. Corona borealis is Kílú's boot. Names of stars in the Pleiades are given, Yiñla-ñeut and Čanái, etc.

The Kamchadale tradition probably was closely allied to that of the Maritime Koryak of Kamchatka, since all the ways and habits of life were alike among these two tribes. Their chief difference lay in their languages. Unfortunately most of the Kamchadale folklore is lost. Steller, in his description of Kamchatka, gives a few stories of Kutq. Those that he gives in extenso are still known to the natives. Others, very important ones, are only briefly mentioned. Both he and Krasheninnikoff say that the Kamchadale Kutq stories were numerous, and strongly imbued with the ribald character which is typical of the Raven myth. Steller gives Xaxi as the name of the Raven's wife, and Desellkut as that of their son.¹ The latter name sounds

¹ Steller, *Beschreibung des Landes Kamchatka*, p. 254.

almost like a Koryak word. Krasheninikoff gives the following list of names of Kutq's family, probably more or less distorted by mispronunciation: Kutq's wife, Ilkxum; one of his sons, Symskalin; another Tizil-Kutq; his daughter, Siduka; his grandson, Amleya; his granddaughter, Sidukamshich, etc.¹ Of all these, I could find among the Kamchadale only the name of Cijil Kutq. All others are changed for Koryak names, as mentioned above, probably because, among the Koryak of Kamchatka, the old tradition remained alive longer than among the Kamchadale, who were entirely Russianized. From Steller's and Krasheninikoff's remarks, and from the fragments of tales still existing, we may conclude that Kutq was believed to have founded the settlements on all the rivers of Kamchatka in succession. After finishing his work he went away (Steller says, to the land of the Koryak and of the Chukchee), or was transformed into stone, together with his house, boat, and family. In several places in Kamchatka, as well as in Peshina bay and Gishiga bay, the Kamchadale and the Koryak point out the mountain summits which are supposed to be these transformed houses and personages.

I will now give some of the most characteristic episodes of the Raven myth in Asia. I will give those common to Asia and America first; but it seems desirable to add others which illustrate the general similarities of style, although the component incidents seem to be quite different.

There are quite a number of tales connected with the creation of the world, its transformation by the Raven, and the subsequent freeing of sources of light from the *kélé's* dominion.²

1. The most important incidents of the creation myth are as follows:

The Creator sits in darkness and deliberates how to obtain

¹ Krasheninikoff, *Description of the Land Kamchatka* (in Russian), vol. II, pp. 100-106.

² *Chukchee Materials*, Nos. 49-61, pp. 158-175.

light. Two countries, Lú'ren and Kéñičvun, are in existence. One of these is assigned to Reindeer people, the other to Maritime people.

In another version the Creator makes these countries in the form of large islands, then hurls them downward. Both names occur as those of Chukchee villages: the former on the Pacific, the latter on the Arctic shore. Moreover, Kéñičvun signifies in Chukchee "a curve."

Then the Creator makes the Raven, and bids him obtain the light. The tradition is emphatic on the point that the Raven has been created. There is a tale in which he declares he has not been created, and another in which it is told how he is punished by the Creator for insolence. In some versions the Creator forgets or omits to create the Raven, who creates himself from an old fur coat left on a camp-site, and afterward proclaims himself independent. In shamanistic incantations the Raven is sometimes called, in accordance with this tale, "the outer garment of the Creator." The Raven gathers (in other versions creates) various birds. They fly off toward the dawn and try to pierce the stone wall of the day with their beaks. The partridge breaks a part of hers, and therefore has a very short beak now. The Wagtail is so worn out by fatigue that his body shrinks, and he begins to shake as he does now. At last one of the three birds (Raven in one version, Wagtail in another) succeeds in making a small hole, and the dawn passes through. The Creator drops some seal-bones on the land of Lú'ren, and they become the first man and woman. In a similar manner a few reindeer-bones are transformed into the first human pair in Kéñičvun land. The Creator wants to get news of them and sends, in turn, the wolf, the fox, and the bear; but none of these succeeds in reaching them. They are cursed by the Creator and flung far away into the world. The cursing of various birds and beasts, and the flinging of them into the world, is repeated in several versions. In some cases the Raven is the performer of this act. In other versions, on the con-

trary, he is cursed and punished by the Creator together with the other animals.

Finally the Creator himself goes and finds the human couple. They are naked and half-witted, and stand or lie motionless on the ground. He starts to teach them how to eat and to drink, how to carve with the knife, and even how to defecate. Finally he orders them to lie down, covers them with a skin blanket, and teaches them how to copulate. Then he brings reindeer, makes a fire-drill and gets fire from it. He instructs the reindeer-people to be nomads, and the dwellers of the sea-coast to hunt the seal. Finally the fire-drill is forgotten on a camping-place, and transforms itself, of its own volition, into a Russian.

In one very curious version of the legend, the Raven creates himself from nothing, and calls himself "self-created." He tries to create men, but fails. His wife lies down to sleep. To his amazement he sees her assuming the shape of a woman who becomes pregnant, and, while still asleep, gives birth to several boys. When the boys see the Raven, they begin to inquire about him, and, hearing that he is their father, begin to mock him and to pelt him with mud. The Raven flies away to search for other people, and finds a tent full of men on the border-line between earth and sky. They assert that they have been created from the fragments produced by the friction of the sky against the earth. The Raven flies away and makes islands and continents by defecating in his flight. He creates lakes and rivers from drops of his water. Then he finds every kind of wood, chops it with an adze, and from the chips creates game, fish, sea mammals, etc. Woman, however, has not been created yet. A small Spider-woman, *Kûrgu-néut*, descends on a spider's thread. Her womb swells up, and, bursting, lets out four girls. The men of the sky-border carry them away and want to marry them, but do not know how to copulate. At night the Raven instructs the Spider-woman, and, in doing so, he bruises her hands and shoulders with his beak. Then she instructs mankind.

In another tale the Creator and the Raven try to make man of soft clay. The Creator clothes his men in leaves, which he pounds with mud, and is ridiculed by the Raven, who clothes in grass the men made by himself. This episode probably is borrowed from the Yakut, and repeats the well-known dualistic myth of the Old World.¹ Then they both try to create language. The Creator writes down his on a large paper;² the Raven simply caws, and the people begin to speak. Then the Raven gets fire, using his forefinger as a fire-drill, and his foot as a base for the fire-drill. Another time he strikes one thumb-nail against the other, like flint and steel. He ascends to the uppermost heaven and obtains two reindeer from the Godly Being [Áññā-vátrgīn. The word "áññā" ("dññā") is used also for a shaman's medicine spirits]. He brings them down to the people and creates the Reindeer Koryak. The Maritime Koryak, on the other hand, arise of their own will from dogs' excrement. Then he ascends again, and, stealing from the uppermost heaven the sun, puts it into his mouth. After some time he is found out by the Godly Being. He is tickled under the chin. Then he must laugh, and lets out the sun.³

In other Chukchee versions of the creation myth, the Raven overtakes a monster, half man, half reindeer.⁴ He splits it in halves, creating the herdsman and his herd. He finds a wild man, who catches the wild reindeer and tears them with his teeth. The Raven teaches him more suitable ways of hunting, and the

¹ The wandering transformers and culture heroes, however, appear in pairs in tales belonging to various Indian tribes, and a contest between the two frequently takes place. Perhaps we have here one more point in which the old traditions of both continents present evident analogies.

² In a Gilyak tale the forty-seven sons of the first living man received some white paper from the god Targhan, and so were able to write. One day they could not understand one another, and talked in forty-seven different languages. Afterward they lost their papers and forgot the art of writing. — Laufer, "Preliminary Notes on Explorations among the Amoor tribes" (*American Anthropologist*, April-June, 1900, p. 376).

³ Compare Boss, *Indianische Sagen*, p. 187, § 2.

⁴ Compare Nelson, loc. cit., p. 458.

man becomes a Lamut. The Raven makes reindeer from a number of dry boughs, kicking them with his heel. This last detail is repeated in various hero-tales, where, usually, an orphan-boy, a young shaman, or a poor suitor of a wealthy bride suddenly creates large herds by kicking dry boughs.

It is told also that the Creator made men of stone, but, finding them too clumsy, restored them to their former condition. Everywhere in the mountains there are shown groups of boulders of various forms, which are presumed to be these people or their houses.¹

In another creation legend, it is said that man lived formerly on stones—red stones serving as meat and white stones as fat. The first pair were brother and sister. The sister asked the brother to marry her, and, on his refusal, deceived him, changing her place of dwelling, dress, etc., and pretending to be another person. From their children issued mankind.

2. In the Yukaghir traditions several mountains appear as living beings. In one tale, for instance, the mountain Large-Heart (Čómočuvóje) is a young woman who has many suitors. She bears a child by the mountain Kogé'lgie. A rival suitor, the mountain Lagáyék, throws the infant into the water. It drifts down for several miles. The woman beats the offender with an iron tailoring-board. Lagáyék falls down, and his shrieks are heard far off. A number of other mountains, whose names are all mentioned, want to go and help the combatants. All these mountains are situated on the banks of the Kolyma, in the country of the Yukaghir.² The notion about the mountains making love and fighting bears resemblance to the ideas of the North Pacific Indians.³

3. In a series of tales the Raven steals three skin balls con-

¹ Compare Boas, *Indianische Sagen*, p. 319, § 20.

² Jobelson, *Yukaghir Materials*, p. 101.

³ Boas, *Indianische Sagen*, pp. 17, 360, § 153; *Mythology of the Bella Coola Indians*, p. 28.

taining the light, from the house of a *kile*, by the instrumentality of the young daughter of the *kile*. In Indian tales the luminaries are usually kept in special receptacles. In one Alaska Eskimo tale the source of light looks, however, like a large ball of fire.¹ Sometimes the balls are kicked upward and burst, and their contents stick to the firmament. The girl, too, is kicked upward and sticks to the moon. In other versions the Raven pecks at the skin covering of the balls. After piercing it he is scorched by the gushing light and becomes quite black. Finally he transforms himself into the thunder and soars over the world, frightening the people with his thunder-cawing. He creates rivers by making furrows on the ground with one of his wings that he drags behind, and filling them with his water. It is an oft-repeated incident of these tales that people living in darkness mistrust and mock him.²

4. In one tale it is told that the Wolf, the richest herdsman in the country, scoffs at the Raven on account of his poverty. The Raven takes back all the luminaries and hides them in his house, but restores them to the firmament after receiving a heavy ransom. As a part of the ransom he receives two sisters of the Wolf, girls with black ear-rings. They agree to cut out the Raven's tongue. When he comes home, they request him to show his tongue, and swiftly wind around it a loop of twine and tighten it so that they forever deprive the Raven of the power of speech. In American tales a similar trick is performed by the Raven on the Cormorant.³

5. All these tales are Chukchee. A Kamchadale tale about the Raven and fresh water resembles the corresponding American episode. The Raven, Kutq, finds on the seacoast Ávvi, the lobster, who in other tales is represented as a sea-god. Ávvi, at

¹ Nelson, loc. cit., p. 484. See also Boas, "Notes on the Eskimo of Port Clarence, Alaska," *Jour. Am. Folk-Lore*, 1894, p. 206.

² Boas, *Indianische Sagen*, p. 313, § 2.

³ Compare Boas, *Indianische Sagen*, p. 330, episode 7.

his request, carries him into the depths, and feeds him with dried meat, but refuses to give him to drink. The Raven is tortured with thirst. He sings about his sisters having plenty of water up on the earth, and finally promises them to Ávvi for a bucketful of fresh water. In another version, however, he himself steals the water.

6. The American incident of the leaf swallowed by the chief's daughter, who afterward gives birth to a child who is no other than the Raven, is repeated in some Chukchee versions. The Raven, in the course of a contest of strength in supernatural power with a mighty shaman, transforms himself into a leaf of *Polygonum polymorphum* (in another version into a hair), and drops into a pool. A girl carries him to her house in a bucket, but he is found out by his rival. In the tales of the origin of the sun, the Raven and the small girl clamoring for balls never appear as the same person.

7. The Raven (in another version, a wandering young man who was the Raven's slave) comes to a camp of wealthy traders and urges them to flee under the pretext that their enemies are coming. After their flight he takes all their provisions and peltries, which he carries home.

8. The Raven, or Raven's son, assuming the form of the thunder-bird, carries away a whale in his claws, but is swallowed by the whale while he bends too low over its mouth. Whale and Raven drop into the sea. The Raven, however, kills the whale by pecking at its heart, and comes out. In the Koryak version of northern Kamchatka he is frightened by the approach of some people, enters the jaws of a dead whale, and comes out after they have ripped open the belly.¹ Coming out of the whale's belly, the Raven flies off, his skin full of oil. On his way he is hailed by a Fox-woman. He tries to answer her and drops some oil on her fur coat. She squeezes the oil out of her coat into her oil tub, and, out of gratitude, sends

¹ Compare Bons, *Indianische Sagen*, p. 330, episode 15.

the Raven some berry-cakes, which, however, cause his sudden death.

In another tale the Raven's son-in-law enters the whale and is carried on the sea for a long time, subsisting all the while on the whale's meat.

The incident of swallowing living beings is attributed to several other animals besides the whale. For instance, the Raven transforms himself into the carrion of a reindeer that is partly eaten by a wolf. The Raven thus enters the wolf's stomach and succeeds in killing him with his claws. In a Koryak tale two bird-women go to a cave on the shore, one after another. They are swallowed by a giant female *kdla*,¹ but succeed in making an exit for themselves with their claws.

9. The most widely known of the Raven tales peculiar to the west coast of Bering sea is the tale about the Raven and the Mouse-girls, which appears with the same details among the Chukchee, the Koryak, the Kamchadale, and the Russianized Yukaghir of the Kolyma. I give the modern Kamchadale version of this tale with parts from the Koryak of northern Kamchatka. Steller relates the first episodes with the same details,²

The Raven puts on his raven-breeches and raven-boots and goes strolling on the beach, where some small mice have found a little seal. They try to conceal it. When unable to do so, they pretend that it is a log, though it has eyes, eyelashes, claws, etc. The Raven is not deceived. He kicks them aside and carries away the seal. In the night-time they come to his house, led by the smallest of them, *dxgtkl* ("hairless" in Koryak), eat up all the cooked meat, and defecate into the dish. Besides, they put some sharp stones in the boots of Raven and of his wife. In the morning, after their tricks are discovered, the Raven again puts on his raven-breeches, takes his raven war-club, and starts to seek revenge: but the Mice call him their grandfather, and give him a

¹ See p. 587.

² Steller, loc. cit., p. 285.

large cake of berries mixed with fish. Then they offer to louse him. After lulling him to sleep they sew to his eyebrows some strips of red fur. When he awakes he sees everything around as if on fire, hastens home, and, believing he sees a blaze around his house, calls Miti, and requests her to sacrifice the worst of their sons in order to appease the flames. The next morning the Mice again lull the Raven to sleep and sew a bladder-bag on his buttocks, so that he defecates into the bladder and cannot find his excrements, but afterward is frightened by the rattling noise they produce behind his back. After that he sets out to catch partridges, but, instead of bringing the birds home, he eats them all when visiting the snares. The half-starved Miti finally discovers that his hunting cabin in the forest is full of partridges. She catches one, plucks it alive and sends it to the Raven's cabin, instructing it to frighten him by crowing and by beating its wings. The Raven is so badly frightened that he flies home, followed by the plucked partridge, which repeats every cry he makes. Miti kills the bird-charm and sits down before the window to mend her coat. After that follows the episode about the Mice darkening the window, which induces Miti to cut off her nose and cheeks.¹ At last Miti discovers that the Mice are the real cause of her trouble. Then she brings out a large bag, and, putting it across the trail of the Mice, catches them all and hangs the bag on a high larch-tree, intending to preserve them for the coming month.

This version belongs to the Kamchadale. The last episode is followed by the incident of the delivery of the Mice from the bag by the Fox,² which, among the Chukchee, forms the subject of an independent tale, though its details are identical with this episode of the Raven tale.

Miti wants to take vengeance, but the Fox proves her alibi, smearing her body with alder-juice and pretending to have been

¹ See p. 630, No. 23.

² Compare p. 615.

very sick. She requests Miti to carry out a vessel filled with the same juice, pretending it is her urine mixed with blood. She follows her stealthily, and succeeds in hurling her down from a steep cliff into a deep river.

In the Koryak version of the same tale, when the Raven is lulled to sleep the third time, the Mice tattoo his face, and afterward request him to look into the river. He mistakes his image for that of a pretty tattooed woman. He desires to marry her, and sends her as wedding-gifts his stone hammer and anvil, which sink to the bottom of the river. Then he jumps in himself, but drifts out to the open sea, while exclaiming that the sky is shaking and turning above his head.¹

10. In the Chukchee version, this episode is followed by another one. The Raven pretends to be dead, and is conveyed by his wife on a sledge to an underground dwelling that is to serve as his tomb. While dragging the sledge across a brook, Miti, owing to her exertion, breaks wind. The Raven cannot restrain his laughter. His son notices that he laughed, and tells his mother, who reproves the boy for saying that the father is alive.

It is very remarkable that the incident of a woman breaking wind while carrying a man across a brook should occur in one of the Korela tales of eastern Finland, and it may have been brought to northeastern Asia by Russians, though nothing is known about any intermediate links. However, the similarity between the old folklore of arctic Europe and northeastern Asia can also be traced in some other cases.²

Miti leaves with the Raven two bags of provisions — one filled with meat, the other with fat. Afterward a Fox sees him cooking the provisions. (In another version the Fox notices only the smoke coming out of the vent-hole.) She tells Miti, who then plucks a live partridge, sews it to her body in place of one of her breasts which she has cut away, and then drops it on

¹ Compare the Kamchadale version of this in Steller, *loc. cit.*, p. 259.

² See p. 668.

the Raven through the vent-hole. He is frightened and returns home.

11. In another Chukchee version, the Raven wants to transform himself into a woman. He transforms his penis into a needlecase, the pubis into needles, and the testicles into two thimbles. The Fox-woman, however, sees him and informs Miti. She advises her to take revenge on the Raven,—to put on man's dress, and, when passing by the tent where Raven lives, to declare that she is going to woo Miti. She does so. Then the Raven feels jealous, resumes his former shape, and hastens home. Miti, however, has made the figure of a man, and has laid it down by her side in the sleeping-room. The Raven, seeing his presumed rival, and sent away by Miti, dies of grief.

12. Another episode of the Raven myth, widely known on the west coast of Bering sea, is his struggle with the giants who produce the cold wind. Bad weather causes famine in a village. The Raven wants to stop the tempest. He starts for the land of the Wind-giants. His sledge is an old boat, and for sledge-dogs he selects from among the wild beasts two white foxes (in another version, two white hares). He finds the Wind-giants shoveling snow with the shoulder-blades of a whale. The Raven cheats them out of all their meat and peltries, and even induces them to throw into his boat their fur coats and caps. Then he makes good his escape, regardless of their frenzied cries, and leaves them to be frozen to death.¹

13. In several Koryak and Chukchee versions of the legend there appears still another episode of the Raven myth. The Raven gives his daughter in marriage to the son of the Wolverine. The Wolverines, however, ill-use her, give her bad seal-skins in place of her soft reindeer-skin garments, and tie her tongue with twine to stop her complaints.² Emémkut, the Raven's son, discovers that his sister has been maltreated, and sends the Raven to

¹ Compare Nelson, *loc. cit.*, p. 484.

² Compare *ibid.*, p. 502.

fetch her; but the latter is readily satisfied with the assertion that his daughter is dead. The wronged woman wants to speak to her father, but the people pretend that she is a slave and frighten the Raven by alleging that she is insane and blood-thirsty. The Raven departs without recognizing his daughter; but Emémkut finally succeeds in freeing her. In order to take revenge for the ill-usage that she has received, he makes an artificial dog of snow, and a little child of his excrement. The dog is transformed into a man, and is sent to the Wolverine's camp, together with the child. During the night he copulates with one of the young women, resumes the shape of a dog, and drags her along as dogs do,¹ until her body is entirely worn, and therefore he brings to the Raven's house only one small bone of the woman's pelvis. Meanwhile the excrement-boy dissolves in the sleeping-room and soils the skins.

14. In a series of Chukchee tales, the Raven is derided on account of his greediness and of the improper food that he has to eat. He feeds on human excrements, calling them self-pounded cakes. He visits his son-in-law, a rich reindeer-breeder, and is treated to the best fat. When his son-in-law returns the visit the Raven boasts of the abundance of his supplies; but his son, when sent for provisions, brings only a putrid carcass of a small pup which he found on an old camp-site. However, the Raven is given a fat reindeer buck by his son-in-law. He sends his son with the good tidings to Miti, while he himself remains with the carcass, and in two days consumes all the flesh. He covers the bones with a layer of bleached raven-dung. When he reaches his home he assures Miti that the carcass is covered with fat.

15. In a Koryak legend it is told that Miti, during the absence of the Raven, is visited by her lover, the Magpie. He bruises her face with his beak, and she wants the Raven to believe that it was done by the sharp beams of a dog shed. The Raven, however,

¹ Compare Boas, *Eskimo of Baffin Land*, p. 166. See also p. 113.

finds out what has happened, and, with the heavy smoke of cedar-boughs, drives the Magpie out of the house.

16. The Raven and the Fox are neighbors. The Raven goes hunting, and finds the house of the giant-woman, who has a reindeer-herd pent up in the house to protect them from mosquitoes. He spits down through the vent-hole and kills a half-grown fawn. The woman sees the fawn die, seizes it, and flings it out of doors. Then the Raven takes it home. The Fox, smelling the roasting fat, asks for some, and receives a small piece. She goes also, and in the same way kills a large buck, but when she tries to carry it home she finds herself unable to lift it. When she requests the woman to help her raise the buck on her shoulders, the woman strikes her with a club on the head and nearly kills her.

Another time the Raven goes to a lake and begins to fish through a hole in the ice. He catches the young son of the master of the lake, splits his belly, and, finding it full of fish, takes some and carries them home. The Fox asks for just one small fish, and is given no more than she asks for. Then the Fox goes fishing and catches the boy. She splits his belly, but takes too much fish, and, when carrying it home, breaks through the ice and is drowned.

This tale is from the Chukchee. It may be compared with an Indian tale,¹ though there the Raven plays the part of the foolish fox, and a small bird acts wisely.

In one of the Koryak tales the Raven and a small bird are competitors in a marriage-suit. The Raven acts basely and foolishly, and is vanquished by the small bird.

17. In a Koryak tale the Fox catches salmon; at first she gets a small one, then a larger one. Both are stolen by the Raven, who, in their place, puts stones in the bag. In the morning the Fox catches a large thong-seal and moves away from the Raven. The Foxes settle in another place, and are cooking meat,

¹ Boas, *Indianische Sagen*, p. 106.

while the Raven is hungry. He flies about, swallows their ladder and their lamp, and then tries to pull up the kettle through the smoke-hole. The daughter of the Fox strikes him with a stick, the kettle is overthrown and the broth scalds the heads of the Fox's children. The old Fox strings a piece of meat on an iron hook and flings it upward. The Raven snatches it and is caught; he holds on with his hands and feet to the poles, and finally the line snaps and he flies away with the hook in his jaw. Finding the Wolf, he proposes a vomiting-match, vomits out the ladder, the lamp, and the hook, and ties them to the Wolf's tail. The latter is so much frightened by their continuous rattle that he flees, and leaves in his house all the meat, which the Raven eats.

18. In another Koryak tale it is told how the Raven Kutqinnaku, when in want of food, creates a river, tries to catch fish with a hook, but catches his own shoulder and is compelled to desist. The Fox offers to try her hand, but does not catch anything. Somehow the Raven succeeds in catching one of the seals that lie on the beach. He is careful to pick out the smallest one. The next morning the Fox goes to the shore and tries to catch one of the largest seals, but is unable to lift it on her back. The seal offers to help her, but, while getting on her shoulders, contrives to push her into the water.¹ The Fox is carried out to the open sea, but finally succeeds in coming back to the shore. She spreads her fur coat on the sand to dry, and, taking out her eyes, sets them by her side, enjoining them to keep watch, and, if anything should happen, to rouse her by tickling her belly. The floodtide sets in. The eyes tickle the Fox's belly, but cannot arouse her. Again she is carried away, then lands, and taking hold of her eyes, she pounds them with a stone. In their place she tries, first two black berries, but they are too dark; then two small bits of clean ice, but they weep all the time.²

¹ Compare p. 651.

² Compare Boas, *Indianische Sagen*, p. 7.

19. The Raven turns into a reindeer, but is killed by the Wolf. The Fox transforms herself into a man, marries the Raven's wife, and begins to play tricks on her. She kicks Miti's kettle, breaks it and scatters the meat about, drops her butcher-knife into the fire, and finally revives the meat and sends it out. Then she goes along the shore and sees some Gulls drifting on a log. They are fishing. She jumps to the log, the Gulls fly off, overturning the log, and the Fox is drowned.

20. In a Koryak tale the Raven excretes three pieces, one large and two small ones, and pretends they are a mother bear and two cubs, that pursue him. The next morning he excretes another piece, and declares it to be a nice young woman. He brings her into the house and lies down with her, but gradually she melts away.¹ Steller mentions also another tale about the Raven marrying various creatures, but does not give any details. I give here a few tales of this kind:

21. In a tale of the Russianized Yukaghir of the Kolyma, the Raven carries away a young girl. Her brother goes in search of her, but, on reaching the house, is afraid to go in. At last he enters, is invited by his brother-in-law to a match of eating nuts, but contrives to put lead bullets in their place for the Raven's share. (This last detail is taken from old Russian tales.) The Raven prepares a stifling hot steam bath for his visitor, who pushes the Raven in, and thus kills him.²

22. In a Koryak tale from northern Kamchatka, a gosling cannot fly away in autumn because his wings are too short. He is left on the lake by his parents. A fox wants to devour him, but Kutq saves him and brings him to his house. The Goose-boy grows into a man, and Kutq's daughter marries him; but they quarrel on account of the difference of their food, and the Goose-man flies away.

23. In another Koryak tale, Kutq marries a Cedar-nut girl with

¹ Compare the Kamchadale version of this in Steller, loc. cit., p. 261.

² Compare Boas, *Indianische Sagen*, p. 277.

a copper head, somewhat like the lid of a copper teapot.¹ His son Emémkut marries a Shell-girl and settles with her in a cabin under the bush. In a tale mentioned by Steller, Kutq copulates with a shell; his membrum virile is cut off and remains in the shell. His wife finally finds it, when cooking and opening the shell, and restores it to its proper place.²

24. In a Koryak tale from Kamchatka, Kutqinnaku lives with his sister Amllu, who is a small spider. Pičvúčín marries her. Kutqinnaku becomes ill and is advised by his brother-in-law to travel to the mouth of Tighil river, which is in central Kamchatka. There he finds a Whitewhale-woman, Míti, and marries her. Their son is Emémkut, who, when full grown, takes four wives, — a Whitewhale-woman, a Faded-grass-woman, a Burning-fire-woman, and a fourth wife whose name (Kinčesätt-náut) has no significance. Afterward he marries a fifth wife, Dawn-woman (Tie-néut), who continually quarrels with all the others. His first wife feels insulted and flees from the house. He goes in search of her, and on the way, feeling thirsty, drinks some water from a brook. He is struck by the smell of the smoke coming up from beneath. On looking down he notices his aunt Amllu and her servant-girl Kihllu. They request him to come down, and offer him a little food, — a cedarnut-shell filled with seal-oil and a tiny dried gudgeon, — recommending him to fall to with his eyes shut. When taking the food he finds that his right hand is dipped into oil up to the elbow, and the gudgeon has turned into a stately king-salmon.

Such sudden transformations of small dried fishes, small roasted birds, etc., into large pieces of choice fish and game; the increase in size of oil-vessels, etc., frequently occur in tales from the west coast of Bering sea. In a tale of the Russianized

¹ In some Chukches tales appear houses, boats, sledges, made of copper, as well as iron sleeping-rooms, chains, and swords. Reference to these metals was probably inserted in the tales only after the coming of Europeans, and there are no remarkable incidents connected with them.

² Steller, loc. cit., p. 263.

Yukaghir of the Kolyma, a boy who is maltreated by his father goes away across the tundra in search of unknown people living on the shores of the sea. On the way he kills a tiny bird and roasts it on a small wooden spit. At the first bite the bird turns into the fat breast of a large mountain sheep.

25. In a Chukchee tale two old women who live together want to have a child. One of them plays the husband. The other becomes pregnant and gives birth to a Mouse-boy, whom the Owl steals and swallows. The Raven undertakes to restore the boy. He visits the Owl and gets up a quarrel which ends in his inducing the Owl to break wind. The mouse-bones come out pasted together as a ball, and turn into a nice fur-clad boy. The Raven offers to cure the Owl of diarrhoea, and inserts into his anus hot stones, which burn his intestines.¹ The Owl is so much weakened that he cannot rise. Then the two old women, in the form of an old man and his wife, come with sticks and strike him. The Owl defecates, and the bones of various animals come out. These return to life, and the land and sea are filled with game.

26. In another Chukchee tale a Fox is talking with the Bear about what is the most terrifying thing in the world. The Fox says it is a "hummock-head," meaning a man. The Bear mocks the hummock-head, and says that the rattling and gibbering partridge is much worse. They agree to make the test. The Fox has a great time with the partridges. The Bear tries to kill a man, and is wounded by a spear. At his next meeting with the Fox, he is ashamed to acknowledge his defeat, and says that his belly is aching. The Fox offers to cure him, and makes him swallow hot stones, which scald his intestines. Then she feeds her children on his body.

In the Yukaghir version of this tale, the Wolverine comes and wants to eat the fat protruding from the wound, but the Bear strikes him with a firebrand. The Wolverine's back is scorched, but his mother patches it with a piece of brown smoked and

¹ Compare Bonn, *Indianische Sagen*, p. 317.

curried reindeer-skin. Hence the wolverine's back is now brown.¹

27. In a Kamchadale tale the Raven Kutq is said to have two daughters. Two suitors come—North Wind and South Wind. When the first marries one of the daughters and settles down with Kutq's family, it becomes so cold that, when Kutq is inspecting his fish-weirs, blood oozes out from under his nails. He becomes angered and sends away his son-in-law. Then South Wind marries one of the daughters, settles with them, and immediately the weather becomes so damp that everything is covered with mildew. Rain falls so heavily that even the underarm portions of the fur shirts rot. Men, beasts, birds, all are starving. Then the elder daughter sends her young son to find his father, North Wind, who had left them a year before, and thus she succeeds in bringing back good weather.

28. The Chukchee tell that the Raven is invited by the Gull family to perform a shamanistic incantation. He beats the drum, and says, "I have fallen on my buttocks! I have fallen on my buttocks! Kewe, kewe, kewe! I have risen again!" He mocks his host and flies away.

29. In another tale it is told that a woman, made ill through an evil charm sent to her by a foe, asks the Raven to cure her. He sings and dances, then flies away to the upper world, but cannot find the evil charm. He sends first for a fox, then for a beetle, a squirrel, and a polar bear. This last one finds the charm and brings it tied up in a mitten. This tale shows a certain similarity to the one recorded by Boas.²

30. A poor boy wants to obtain magic power. He pretends to be dead, and lies down on the tundra. The Ravens assemble, and, unsheathing their beak-knives, come nearer and nearer. The chief—literally the "Strongest One"—gives a signal to begin skinning him, but the boy snatches his knife from him.

¹ Jochelson, *Yukagir Materials*, p. 27.

² *Indianische Sagen*, p. 78, § 8.

The other Ravens fly off. The Raven-chief wants his knife, and, in payment for its return, makes the boy a mighty shaman. This tale belongs to the Chukchee, and closely resembles one from Alaska.¹ Even the minor details are similar in both tales,—for instance, the talk of the Ravens among themselves and with the boy,—though the Alaskan tale ends in the boy's death. I found this tale also among the Eskimo of Indian point. The Chukchee have also a dramatized form of this tale, which is used to secure good luck in hunting.

31. Another important myth of northwestern America, that of the Mink, does not occur in Asia in its complete form, because there is no mink in northeastern Asia. The first part of the tale, relating to the Sun's son, who is left on earth in a village, and goes up to heaven in search of his father, however, is found among the Koryak and the Chukchee.

The Sun comes down to the earth and marries a girl. They ascend along one of the Sun's rays, and for one night pitch their camp on the banks of the Pebble river (the Milky Way). In the morning, however, when the Sun starts on his usual way, a Black-beetle-woman strips the Sun's bride of her clothes, and conceals her under the roots of the grass. She puts on her dress (in another version, her skin), and becomes the Sun's bride in her stead. The woman, however, succeeds in rising out of the ground. She has a son, and begins to snare reindeer. She kills a great many. The boy grows rapidly. When he has learned to shoot with a bow, his mother sends him in search of his father. She tells him to shoot an arrow across the Pebble river. The arrow falls down in a valley near the Sun's house. The Sun recognizes the boy, and finds his former wife. He asks the Beetle-woman to let him louse her head, and, when running his fingers through her hair, he finds out that she has a beetle-neck. Then he makes a pile of wood in front of the entrance to his house, and burns her. Before dying, the Beetle-woman curses the human race

¹ Nelson, *loc. cit.*, p. 474.

with various diseases,—smallpox, syphilis, and others. She continues cursing mankind until her husband pushes her with a stick farther into the flame, and turns her over, belly upward. This calls to mind the Indian tales of K'álk'alo-ítl and T'ál.¹ The chain of arrows used by Mink as a ladder for ascending to heaven does not occur on Asiatic soil. The heroes usually go to the "dawn side," and ascend to the upper world along a steep trail leading upward. In one tale, however, the hero darts a needle upward, and ascends along the thread which is run through its eye.

32. In a series of tales the white hare appears as chief hero. He secures the sun from the spirits; with a small bow of grass he vanquishes all competitors in a shooting-match and carries away the wealthy bride on a sled of the same material, after she has broken all the stronger sledges of his rivals.

33. In one Chukchee tale the luminaries are fetched by the Wolf, while the Raven is blamed as a poltroon and a good-for-nothing. This tale has no connection with the general Raven story.

34. Some very curious Kamchadale and Koryak tales relate to the ermine, probably representing fragments of a separate Ermine myth, not unlike in character to the Raven and Mink series.

The Ermines live in one village with Kutq. The Ermine-woman is in labor. Her husband runs through the village, inviting the people to a feast; but no guests come. A young Ermine-girl, when sent to Kutq's house with some cooked meat, is thrown out. The Ermines are kicked and driven away from the village. In another tale the Ermines are described as living under a cliff on the seacoast. The flood overflows their dwelling while they are in bed, and they charge each other with letting water. They climb the mountains. On the summit the father Ermine cuts off one of his ribs, and pretends to have found it on an old

¹ Boas, *Indianische Sagen*, pp. 57, 29.

camping-place of some Reindeer people. They cook the rib; but he faints, and is near death.

35. In one of the episodes of the tale of the Raven and the Mice, they sew to his body the belly of an ermine, with the effect that he can eat but very little. I do not know whether this incident has any connection with other Ermine tales.

36. The tales about fishes are still more interesting than those relating to the ermine. They occur only among the fishing tribes in the southern parts of the region under discussion, both in Asia and America; while the tribes living in the north—for instance, the Chukchee—do not do much fishing, and do not care much for fish.

The Koryak and the Kamchadale in contrast with the Chukchee, and the North Pacific Indian in contrast with the American Eskimo, are primarily fishermen; therefore the tales about fish can have originated only among these southern tribes.

37. In a Koryak tale, which is found also in a Kamchadale version, Kuyq'nnaku and his family are starving. Kuyq'nnaku goes to the sea, finds on the shore a Fish-woman, and brings her to his house. Miti is jealous, and when Kuyq'nnaku has left the house, kills the Fish-woman and cooks her in a pot. Kuyq'nnaku, on coming home, partakes of the cooked fish; but the Fish-woman steps out of the store-room, denounces Miti, and departs for the sea. The arguments of Kuyq'nnaku, who tries to make her return, are of no avail, and after a while the family is starving again.

38. In another Koryak tale, Yiñe'a-néut and Kílú go digging roots, and take along a dried fish-head for traveling provisions. When dining on it, Kílú throws a cheek-bone of the fish at her companion, and the bone immediately sticks to the cheek of Yiñe'a-néut. She refuses to return, and lies down on the ground to sleep. When she awakes, she finds by her side a Fish-man, who is combing his hair. He marries her, and they have plenty of fish from the river near by. Afterward the same happens to Kílú.

39. The general character of these short tales resembles very much that of the Salmon myth of the North Pacific Indians. The Indian idea that fish-bones when thrown into the water are transformed into living fish, recurs in several combinations on the west coast of Bering sea. In the widespread whale-ceremony small parts of the whale's tail, flippers, and head are thrown into the sea in order to change them into living whales.

Hunters, when trading furs, also cut off some small portions of the nose of the animals that they have killed. They keep them as hunting talismans, evidently believing that they are able to transform themselves into new animals. This idea is borne out in the tale of "The Black Bear and the Wandering Woman," known among several of the West Bering tribes. The Bear gives the woman small pieces of various costly furs, which, after arriving at her own village, she transforms into real skins.

40. A number of tribes of the Pacific coast know the tale in which a man (more frequently a shaman) wanders to another world, under-ground or under-water, and finds that one of the inhabitants, animal or spirit, is struck by a sudden illness. Looking attentively at the patient, he notices a harpoon-point in his body, a noose wound around his throat, or some other similar cause of the illness, which, however, is invisible to the other people. He offers to cure the patient, and removes the cause of illness. The patient suddenly recovers, and pays the visitor with the best of his goods.

In the Chukchee version of this tale a man, after various adventures, goes down to the lower world, and midway stops for a rest in the land of the mice. Since he is a great shaman, he is requested to help a woman who is suffering from a severe cold and sharp pain in her throat. When looking at her, he notices on her neck a thin noose of grass, such as the Chukchee children make to catch mice. He destroys the noose and the mouse recovers. In return for his services the mouse-people give him

the choicest fawn-skins, which, however, on his return to our world, prove to be dry leaves and pieces of bark.¹

Generally speaking, the world of animals has the same customs and occupations as that of men. Owls hunt lemmings, skin and carve them, store away the best hams, and break the larger bones to extract the marrow. The ermine is a shapely young man clad in white skins.² The fox is a woman in a red fur garment, looking for a husband. The squirrel is a small young woman with long fingers and a handsome gray overcoat; she pounds cedar-nuts and makes cakes of them.

41. The tale of "The Woman Marrying a Black Bear" is well known among all West Bering tribes, even among the Lamut and the Tungus, who belong to the stock of the mainland of Asia. The principal features are usually the same. The woman is driven away from her home by her husband, at the instigation of the younger rival, or by her parents for disobedience, or simply by famine. She wanders through the bush, finds a bear's den, enters it, and is fed by the owner. Then she feels sleepy, lies down side by side with the bear, and, upon awakening in the spring, finds that she is with child. The son is born in due time; but he has a bear's face, or bear's ears, or else is hairy all over the body.³

Among the others, the Lamut and the Tungus even consider themselves to have sprung from this bear-faced boy, and call the bear their grandfather. The bear-dances of the Ostiak and of the Aino, the raising of young bear-cubs for the festivities, etc., belong to the same circle of ideas.

42. Several other tales of the west coast of Bering sea present resemblances to tales of the North Pacific Indians.

In the Chukchee tale about Äñqalo's wife, appears a charmed

¹ See Boas, *Indianische Sagen*, p. 356, § 63.

² *Chukchee Materials*, p. 377.

³ Compare Boas, *Mythology of the Bella Coola Indians*, "The Black Bear,"

reindeer-buck, which has been placed by her on the river-bank to kill all passers-by.¹

43. In another Chukchee tale a man named Mé'tiño joins a wild reindeer-herd and wanders about with them. He casts off his clothing and feeds on moss, like reindeer. After a year has passed, he leaves the reindeer and joins the wolves; but the wolves are run down by hunters. Mé'tiño escapes, and, joining the foxes, marries a she-fox. She is caught in a spring-trap, and Mé'tiño, while lingering near her, is secured by the people. When he is brought into the sleeping-room, he faints, and nearly dies from the smell of the house; but, after a drink of warm water, he vomits a quantity of moss, and then a large ball of matted animal hair. After that he again feels like a man.

In another version he acquires, as a result of his adventures, luck in hunting and unerring ability to tell the quality of a large moss-pasture from a single whiff from a small bunch of moss plucked from under the snow.² It may be mentioned here that the Chukchee have a special verb for becoming like a beast — *tsirkic'urkin* ("I become like a beast by supernatural influence").

44. Among the Russianized Yukaghirs of the Kolyma I have collected a tale about a one-sided man who had only one hand, one foot, and one eye. He was very skilful in hunting, and brought to his house reindeer tied in bundles. A young girl found out his lodging, and became his wife. In another version it is told that three sisters wanted to have him for their husband. The youngest, on reaching his house, found food cooked, skins scraped, etc., but no woman in sight. At last she opened a large box in which various insects were hidden. Supposing them to be her rivals, she poured boiling water on them and killed them all. But afterward she was scolded by the one-sided man, and had to do all the work. This tale is quite similar to that of Kasá'na of the Bilqula Indians.³

¹ Compare Boas, *Indianische Sagen*, p. 2, where an elk plays a similar rôle.

² *Ibid.*, *Indianische Sagen*, "The Tale of Mountain Goats," p. 12.

³ *Ibid.*, p. 256.

45. The thunder-bird appears in several Chukchee tales, also among the Russianized Yukaghir of the Kolyma. Near the mouth of Kolyma river, some high and steep crags on top of the peak called Yegoryevich are supposed to be an old nesting-place of the giant Noga-bird, who preyed on reindeer and men, elks and whales, and who occasionally would carry away a seal-hunter in his canoe. The natives are afraid to visit this place, and assert that it is full of bleached bones. I thought I might find there some traces of an ancient place of sacrifice, but I did not find anything. There is a tale from Alaska which corresponds exactly to this belief.¹

Some parts of this tradition may belong to the ancient Asiatic stock, including, among others, the Arabian tale about the giant bird Rokh. In Slavic folklore all fabulous and half-fabulous birds are intermixed. *Noj* (*nog*) signifies in Servian the ostrich, and with some plausibility one may connect with it the Noga-bird of the Kolyma.

In the folklore of the Chukchee the giant thunder-bird appears sometimes to be the same as the raven; but more frequently it is a kind of giant eagle of supernatural strength and power. Even now the eagle is protected by a taboo, and to kill him is supposed to result in bad weather and in famine. In other tales, the thunder-bird is called *g'ndn-gdLE*,—"middle (sea) bird,"—perhaps in relation to the albatross. It is so large that, when floating on the billows and suddenly stretching its long neck, it can easily swallow a whole boat, which, however, will safely glide through its intestines and come out again without much damage. In one tale, however, the men of the crew lose all their hair while in the bird's stomach.²

46. One Chukchee legend tells us that the Raven and the Eagle—both men—live in matrimonial alliance with one woman and have two sons, one of whom is the Eagle's, and the other the

¹ Compare Nelson, *loc. cit.* p. 486.

² See Boas, *Indianische Sagen*, pp. 51, 75, 102.

Raven's. The young ones begin to hunt, and, among other game, bring home a large "high-jumping" reindeer-buck, then a giant fish of the size of a whale, which swallows one of them on the way home, but immediately afterward drops dead. They are forbidden by their parents to wander in a certain direction, but finally start thither, and the Eagle's son is carried away by the giant eagle-shaman. The bird-parents, however, discover what has happened, and succeed in rescuing the Eagle's son.

47. In another tale, the giant bird, when angered, causes a violent storm, which makes the earth tremble.

In still another, a female giant eagle appears as mistress of bad and good weather. When visited by two mortals in her own world, she undertakes, at their request, to clear the sky, and begins to scrape it with a large brass scraper; but, noticing that one of the visitors looks at her naked legs, she grows angry, and hurls them both over to our world.

48. In a Chukchee tradition it is told that a young girl found a human skull and took it home. She made a new cap, nicely embroidered, and put it on the skull, laughing merrily. The Skull joined in her laugh. Her mother heard them laugh, and, while her daughter was away, found the Skull. The whole family were greatly frightened, and agreed to desert the girl. She was sent to fetch fuel, and during this time they hastily packed their belongings and moved. The girl arrived just as they were ready to depart. She contrived to seize the back rail of her father's sledge; but he struck her on the hands with a heavy mallet, so that she was compelled to let go her hold. The Skull, seeing her despondency, promised to go in search of its body, and returned in the shape of a stately young man, with a large herd.

49. There are several tales about men and women left alone in uninhabited places. A Chukchee tradition tells of two cousins with two wives each, who are the best seal-hunters of the village; but they quarrel about a small seal that they cannot kill. The next day the seal lures them to the open sea, where they are

caught by a storm and almost drowned. Finally, when the storm subsides, they land on a small, lonely island. One of the cousins, remembering the bitter words of his companion, takes away his canoe and leaves him on the island. Arriving home, he declares that his cousin is drowned, and takes his wives.

The Pitiful Being¹ looks down with pity on the deserted man, and lets a whale drift to the shore. The man carves it with a pointed stick, then makes a knife from a piece of the bone, a lamp from a hollowed stone, and begins to kill reindeer and seals. The next summer his cousin returns to the island in order to make sure that the man whom he deserted is dead. While he climbs the cliff to inspect there some bleached seal-bones, the wronged man secures both his own canoe and that of his cousin and paddles off, leaving the traitor on the island. The latter is not pitied by the Pitiful Being, and soon dies a miserable death.

50. A young man despised by his neighbors, or, more often, a poor man wandering about in the world, receives from a supernatural source great shamanistic powers. At the time of a ceremony he reaches a wealthy man's house. Asked to practise, he begins to sing. All kinds of large and small game, birds and beasts, come one by one and join in his singing and dancing. The house fills with water; and seals, white whales, and walrus swim around. The neighbors become so much frightened that they immediately flee to another land.²

51. A slave of the Raven wanders about with his sister after his master's death. He catches and kills two young wolves, and cuts their skin into thin strips, out of which he makes seal nets. After a while he reaches the village of the wolves, who maintain that he has killed two members of their tribe, though he obstinately denies it.³

¹ See p. 537.

² Compare Boas, *Indianische Sagen*, 319.

³ *Ibid.*, p. 95.

⁴ *Ibid.*, p. 99 (Kwotianth).

52. In a Yukaghir tale the Hare-boy kills his companion, the young Wolf, and, with his mother, consumes the Wolf's flesh. The she-Wolf finds out that her son's tracks end at the Hare's house. She threatens to denounce him to the chief. Then the Hare constructs a large grass house. In the morning a number of beasts—Wolf, Bear, Elk, and Reindeer—come to the Hare's house to hold court. He offers to feed them before the inquest, and invites them to enter. The door is locked and fire set to the house. All the animals are killed by smoke and fire.¹ In this tale the feasting-house appears again, though among the Yukaghir there is no trace of its use.

53. In a Chukchee tale it is told that white reindeer and reindeer with gray back and white belly come down from heaven. The brown ones and those with brown back and gray belly come from underground.²

54. A bride brought from some country afar off is so fair that the bridegroom does not dare to let his neighbors see her. She is kept all the time in the inner room of the house. When, at the urgent request of some inquisitive men, she is shown to them at last, she causes them to die of carnal desire (literally, from the swinging of their buttocks). This incident occurs in several Chukchee tales. In one tale, the bride is brought from the star Vega, which is called "Foremost Head" (*Ydnot-Iduf*); but the people do not believe it, and want to clear away their doubts by seeing the bride.³

55. A young man who is wandering about comes to a rich house, desiring to find a wife. He has to pass through a charmed door, which snaps at every visitor, trying to bite him; but the young man jumps in so swiftly that it catches only a piece of his coat.⁴

¹ Jochelson, *Yukaghir Materials*, p. 12.

² Compare Hoss, *Indianische Sagen*, p. 53.

³ *Ibid.*, p. 40.

⁴ *Ibid.*, p. 118.

56. The Bear-Eared-One (*Kéiñt-vélu*), the son of a Black Bear who is famous for his strength, is visited by a rival, who proposes a match. They try to lift stones. While *Kéiñt-vélu* lifts, without an effort, the visitor's stone, the latter cannot lift *Kéiñt-vélu's* stone and is vanquished.¹

57. In one very remarkable Koryak tale, a small hungry *kdmak* (identical with the *kile* of the Chukchee) wants to obtain some food from Kuykinnaku's storehouse. He is entangled in a snare, and caught. Kuykinnaku proposes to transform him into some useful household object. The *kdmak* declines to become a skin stopper or a working-bag, but is contented to be a strong new sealskin line. The line is hung before the door, and people from the villages up and down the river try to steal it, but always fail, because the rope gives timely warning to its lawful owners. At last a man succeeds in stealing it. Emémkut promises to restore it. He makes a wooden whale, enters it, and starts for the village of the thief. The people of the village, on seeing the whale, give chase, and hit it with a harpoon to which the stolen line—the *kdmak*—is attached. The *kdmak* lustily bites into Emémkut's flesh, but desists when reproved, and is carried home.²

58. In a tale of the Russianized Yukaghir on the Kolyma, a man wandering about enters the house of a one-eyed woman, who wishes him to become her husband. He, however, hears the gnashing of teeth from beneath her skirts, and, upon lying down with her, he tries to lull her to sleep. Then he finds that her vagina is set with large teeth, like a pike's head. With his knife he cuts away the vagina, and finds under it another of usual shape. Finally he takes the woman home and makes her his slave. In America this tale is known along the North Pacific coast, in California,³ and, according to a verbal communication of

¹ Compare Boas, *Indianische Sagen*, p. 191.

² Compare *ibid.*, p. 359, § 130.

³ Boas, *Indianische Sagen*, pp. 24, 30, 66; Livingston Farrand, *Traditions of the Chilitin* (Memoirs of American Museum of Natural History, vol. iv, p. 13); F. Boas, *Kwakiutl Texts* (Memoirs of American Museum of Natural History, vol. v, p. 96); Dixon, *Maidu Myths* (Bulletin American Museum of Natural History, vol. xvii, p. 69).

A. L. Kroeber and G. A. Dorsey, among the Arapaho. The Chukchee version resembles the American one still more closely. Here the man destroys the teeth with two large stones, and then copulates with the woman. The same detail is repeated in an Aino tale.¹ I met with a somewhat similar tale in northern Russia, where a pretty girl is married to a slovenly young man, against her will. To cause his love to cease, the girl inserts in her vagina a dry pike's head, the teeth of which severely prick the young man at his first approach; at the same time the girl calls him a fool for not knowing that young girls' vaginas usually have teeth. He desists, terrified. After a long interval he tells his misadventure to his mother, who vainly strives to undeceive him, and, in order to convince him, proves to him that her private parts have no teeth. Her son, however, assumes that the teeth have fallen out on account of her old age, and does not believe her. Perhaps this story, in common with many other stories of northern Russia, is of Finnish origin.²

59. I must mention here also the idea of the Indians that the telling of a certain tale is supposed to cause good weather.³

Another Indian tale finishes abruptly with a promise that the weather will be good the next day.⁴ Among the Chukchee and among the Eskimo long tales are supposed to stop wind and bad weather; and some tales end with almost the same words as the Kathlamet tales, — "There now! I have killed the wind!" The idea probably sprang from the fact that the Chukchee and the Eskimo find much amusement in telling stories, and in stormy weather, they have, indeed, little else to do until the storm subsides.

¹ Chamberlain, *Aino Folk-Lore*, "Island of Women," p. 33. See also Boas, *Dissemination of Tales in North America* (*Journal of American Folk-Lore*, 1891, p. 96).

² See p. 645.

³ Boas, *Indianische Sagen*, p. 22.

⁴ Boas, *Kathlamet Texts*, p. 102.

IV.—CONCLUSION

I will now summarize the results of our comparisons. There is nothing to wonder at that great resemblance exists between the traditions of the Chukchee and those of the Eskimo. From very ancient times both tribes were close neighbors and held most active intercourse. In Asia, moreover, there are Eskimo villages, which in former times, perhaps, extended on the arctic coast farther to the west. The influence of Eskimo culture is great and striking on the Asiatic shore, and reappears even in the minutest details of various implements used for hunting, war, etc. Therefore the elements common to the Chukchee and Eskimo traditions can be accounted for by borrowing, or by common origin, or, what seems most probable, may be due to both causes.

The relations between the tribes of the west coast of Bering sea and the North Pacific Indians are more complicated, because, in their present geographic location there is no chance for any direct intercourse between the Chukchee and the Indians, and still less between the Kamchadale or the Yukaghir and the Indians. Nevertheless we find several stories with characteristic details that are common to those tribes of northeastern Asia and of northwestern America most remote from each other, while they are unknown to intermediate tribes, such as the Chukchee and the Eskimo. We must assume that the cause of this peculiar distribution is the closer contact of these distant tribes in former times, or a kindred origin, or both, which, again, seems the most probable.

The Raven legend, the most important of all these myths, extends in one continuous line along the Asiatic and American shores; but close to Bering strait this line seems almost broken by the Eskimo. The Raven stories of the Alaskan Eskimo were probably borrowed from the Indians, or, at least, conceived under Indian influence, like the totem marks and masks of these tribes.¹

¹ Compare Boas, *Eskimo of Baffin Land*, pp. 368, 369.

The importance of the Raven myth in Asia increases from the north to the south as far as Kamchatka; while in America, on the contrary, — excluding the Eskimo, — it gradually vanishes in the southerly direction.¹

Thus we can follow the line of distribution of the Raven myth in Asia from Kamchatka toward East Cape, along the ancient road that Kutq chose for himself when he retired from the land of the Kamchadale.² Then, with a great bound across Bering strait, we find it again on the American shore, and can trace its way toward the south, where it gradually merges with alien folklore.

The question of the part the Eskimo played in the ethnological development of this area remains, on the whole, obscure. As stated before, their material influence was deep and varied on both shores; but in Alaska their religious and social customs were also deeply influenced by the Indians.

In Asia, whatever their geographic position on the Arctic shore may have been in former times, they certainly seem to be, comparatively speaking, new-comers on the Pacific shore. Their villages are few, and occupy only the extremities of some of the outlying capes, while the rest of the coast is held by the Chukchee and Koryak.

Possibly a connection existed on the Arctic shore between the Eskimo and Chukchee and the tribes farther to the west — the Yenissey Samoyeds, the Yenissey Ostiaks, and the European Samoyeds. On the coast of Bering sea, on the main line connecting America and Asia, we may, perhaps, speak of an Eskimo wedge that came from the north and divided into two branches — a continuous line of tribes of kindred culture, or, at least, of kindred traditions — which included the Indians of the North Pacific coast, that part of the Chukchee who do not belong to the Eskimo stock, the Koryak, the Kamchadale, and the Yukaghir.

¹ Boas, *Indianische Sagen*, p. 332.

² Compare p. 639.

In Asia this stock of traditions may have traveled southward along the Pacific coast to the chain of islands extending beyond Kamchatka, and some of these tales may have migrated to or from America across Bering strait before the coming of the Eskimo into that part of Alaska and Siberia that they now occupy.

APPENDIX

Following is a list of traditions common to the West Bering tribes and the American Eskimo. Whole tales are indicated by titles. Incidents are given in abstract. Cases of similarity which have no very characteristic details are indicated by an asterisk.

TRADITIONS OF THE CHUKCHEE

The Woman and the Whale, p. 607.

The Boy and the man-eating *Kils*, p. 608.

The Bird-woman story, p. 611.

Five Girls and the *Kils*, p. 613.

A Man visiting distant countries, p. 616.

Lólgilén, the Giant, p. 617.

Three Brothers and a blind Woman, p. 618.

A Dog that married a Girl, p. 618.

A mangy Orphan Boy,* p. 619.

TRADITIONS OF THE ESKIMO

A tale about two Girls, Rink, op. cit., p. 126; Boas, *Eskimo of Baffin Land*, p. 318.

Origin of Fog, Boas, *Eskimo of Baffin Land*, p. 177. The Brothers visit their Sister, Rink, p. 130.

Ititaujang, Boas, *Eskimo of Baffin Land*, p. 179. The Man who mated with a Sea-fowl, Rink, p. 145. Story of the stolen Wife, Francis Barnum, p. 292.

Igimagajug, Boas, *Eskimo of Baffin Land*, p. 312. The story of three Girls, *ibid.*, p. 317.

Kunuk, the orphan boy, Rink, pp. 132-143; Tiggak, *ibid.*, p. 165. Ak'-chik-chú'-gák, Nelson, p. 499.

Visit to the Giants, Rink, p. 430.

Stories about Adlet, Boas, *Eskimo of Baffin Land*, p. 203.

The Woman who married the Dog, Boas, *Eskimo of Baffin Land*, p. 166; Rink, p. 471.

Kagsaguk, Rink, p. 93. Qaud-jaqdjuq, Boas, *Central Eskimo*, p. 630.

A wandering Man and an old Woman, p. 621.

Children carried away by a *Kila*, p. 623.

A Woman forsaken by her husband, p. 624.

Wanderers, coming back to the village, find their infant children quite grown up,* p. 625.

Child-monster, p. 625.

Magic flight, p. 626.

The episode of the drowning of the daughter of the *Kila*, in a tale of the Raven myth cycle, p. 627.

The origin of Thunder, p. 628.

The episode of the Raven calling to himself various kinds of animals; in a tale belonging to the Raven myth cycle, p. 629.

The episode of the Raven procuring the body of a dead pup for food.

The Reindeer and the Walrus, p. 630.

An old Woman who pretended to be a man, p. 630.

Two wooden Wanderers, p. 631.

Kiviuk, Rink, p. 157; Boas, *Central Eskimo*, p. 623; *Eskimo of Baffin Land*, p. 185.

Mangegjatuakdju, Boas, *Eskimo of Baffin Land*, p. 189.

Takuka, Nelson, p. 467. Kiviuk, Rink and Boas. (Killing of a woman with a peg driven into her ear.)

Kiviuk. (The hero on his return finds his infant son quite grown up.)

Child-monster, Rink, p. 258.

Origin of Fog, Boas, *Eskimo of Baffin Land*, p. 177. The emigration of the Sagdlirmiut, Boas, *Central Eskimo*, p. 619.

Sedna myth, Boas, *Eskimo of Baffin Land*, pp. 119, 163.

Origin of Thunder and Lightning, Boas, *Eskimo of Baffin Land*, p. 175.

The Foxes, Boas, *Eskimo of Baffin Land*, p. 215.

The Raven and the Gull, Boas, *Eskimo of Baffin Land*, p. 216.

The Bear and the Caribou, Boas, *Eskimo of Baffin Land*, p. 220.

An old Woman who transformed herself into a man, Boas, *Eskimo of Baffin Land*, p. 248. The old Woman and her Grandchild, *ibid.*, p. 324.

The Girl who fled to the Inlanders, Rink, p. 219.

Tales of vanished tribes, p. 631.

The tradition about the people stealthily walking around,* p. 632.

The Bear and the Woman, p. 633.

Tips of ears and of noses of killed animals are supposed to transform themselves into whole skins or into living animals, p. 633.

For various customs and beliefs common to the Chukchee and the Eskimo, see p. 634.

WEST BERING TRIBES OTHER THAN CHUKCHEE

The Boy and the *Klla*. Russianized Yukaghir of the Kolyma, p. 610.

The episode of the Fox who takes some little Mice out of the bag and stuffs it with moss in their place; in one of the tales belonging to the Raven myth cycle. Kamchadale, Koryak, p. 615.

People without anuses. Russianized Yukaghir of the Kolyma, p. 615.

In the same tale the episode of the Trunk of the Tree engaged in fishing, p. 616.

Three Sisters and the Child-monster.* Russianized Yukaghir of the Kolyma, p. 626.

The magic flight. Russianized Yukaghir and the Russians of the Kolyma and the Anadyr, p. 626.

The Foxes crowd into a house and are killed. Koryak, Yukaghir, p. 629.

Stories about Tornit, Boas, *Central Eskimo*, p. 634; *Eskimo of Baffin Land*, p. 209.

Kalopaling, Boas, *Central Eskimo*, p. 620.

The Giant, Nelson, p. 471.

The same, Nelson, op. cit. (the Giant), p. 472.

ESKIMO

The Brothers visit their Sister, Rink, p. 130.

Igimagajug, Boas, *Eskimo of Baffin Land*, p. 312.

Origin of the Narwhal, Boas, *Eskimo of Baffin Land*, p. 170.

Episode of the Log catching Seals, in the tale of Kiviung, Boas, *Central Eskimo*, p. 623; *Eskimo of Baffin Land*, p. 135.

Child-monster, Rink, p. 258.

Origin of Fog, Boas, *Eskimo of Baffin Land*, p. 177.

The Foxes, Boas, *Eskimo of Baffin Land*, p. 215.

The Raven-man and the Fox-woman. Koryak, p. 630.

The episode of Kutq's wife cutting off her nose, lips, and cheeks; in one of the tales belonging to the Raven myth cycle. Kamohadale, p. 630.

The Owner of the Forest carries away a Boy.* Russianized Yukaghir of the Kolyma, p. 632.

The Bear and the Woman. Russianized Yukaghir of the Kolyma, p. 633.

The Giant Bird. Russianized Yukaghir of the Kolyma, p. 663.

The Man who married the Fox, Boas, *Eskimo of Baffin Land*, p. 225.

The Spider, Boas, *Eskimo of Baffin Land*, p. 193. Kiviung, Boas, *Central Eskimo*, p. 624.

Kalopaling, Boas, *Central Eskimo*, p. 620.

The Giant, Nelson, p. 471.

The last of the Thunder-birds, Nelson, p. 436.

The traditions common to the West Bering tribes and the North Pacific Indians are as follows:

CHUKCHER

Raven myth:

The Creator and the Raven make Men of clay and grass and endow them with language. The Raven overtakes a Monster—half-man, half-reindeer—and splits it in halves, p. 642.

The Raven Kûrkil creates Earth and Men with the aid of other birds, p. 640.

The Creator makes Men of stone, but afterward restores them to their former condition, p. 643.

The Raven pierces the wall of Dawn with the aid of several other birds, p. 640.

The Raven steals three skin balls, containing light, from the house of the *Kells* through the

INDIAN

Two transformers give to the Deer its present shape. They create Men and endow them with language. Nutka, Boas, *Indianische Sagen*, p. 98.

The Raven Ornestl creates Earth and Men with the aid of other birds. Tlatlasik'oala, *ibid.*, p. 173.

Yetl creates Men of stone, who, however, soon afterward die. Tlingit, *ibid.*, p. 319, § 20.

The Raven requests Masmassa-l'a'niq and others to tear the dark curtain between the earth and the heavens. Bilqufa, *ibid.*, p. 129.

The Raven Yetl undertakes to free the Daylight from the house of a mighty chief through the

instrumentality of the young daughter of the *K'ile*, p. 643.

People living in darkness mistrust and mock the Raven, notwithstanding his promise to get the light, p. 644.

The wives of the Raven request him to show his tongue, then wind it around with twine and deprive him of the power of speech, p. 644.

The Raven transforms himself into a leaf and drops into a pool; then he is carried by a girl in a bucket to the house of her father, but the latter, being a mighty shaman and a rival of the Raven, promptly discovers him in the water, p. 645.

The Raven is swallowed by a Whale, but kills the Whale by pecking at its heart and then comes out, p. 645.

The Raven urges wealthy traders to flee under the pretext that the enemy is coming, then takes away all their provisions and peltries, p. 645.

The Raven and the Fox, being neighbors, go in turn to kill reindeer and to catch fish. But the Fox is unable to make proper use of the assistance of supernatural beings, masters of game and fish, and returns without success, p. 651.

The Raven, pretending to cure the Owl of diarrhoea, inserts hot stones into his anus, which burn his intestines, p. 655.

instrumentality of the chief's daughter. Tlingit, *ibid.*, 312.

People catching fish in darkness mistrust and mock the Raven, notwithstanding his promise to get the light. Tlingit, *ibid.*, p. 313.

The Raven requests the Cormorant to show his tongue and then tears it out. Tlingit and other tribes, *ibid.*, p. 330, § 7.

The Raven transforms himself into a leaf and drops into a pool. The girl, coming for water, dips him up with her bucket and swallows him when drinking. Then she is questioned by her father, who is a mighty chief, unfriendly to the Raven. Tlingit, *ibid.*, p. 312.

The same. Tlingit and other tribes, *ibid.*, p. 330.

The Raven urges the people of the village to flee under the pretext that the enemy is coming, then takes away all their provisions. Tlingit and other tribes, *ibid.*, p. 330, § 11.

The Raven and a small Bird, being neighbors, go in turn to kill elks; but the Raven is unable to make proper use of the assistance of supernatural beings, so has no success. Nutka, *ibid.*, p. 106.

The Raven kills the Bear and makes the Loon swallow a red-hot stone and afterward to drink water, so that her intestines get scalded. Tlingit, *ibid.*, p. 317.

The Fox, pretending to cure the Bear of his wound, makes him swallow red-hot stones, which scald his intestines, p. 655.

The Raven is invited to cure a woman made ill through an evil charm. He sings and dances, but cannot find the charm. Then he sends for various animals and at last the Polar-bear discovers the charm, p. 655.

The Sun comes down to the earth and marries a girl, but afterward they are separated. The woman bears a son, who, after having learned to shoot with the bow, goes to seek his father and finds him by means of an arrow which he shoots across Pebble river (Milky Way), falling near the Sun's house, p. 657.

A boy ascends to the heavens by means of a needle which darts upward and sticks into the sky. The thread of the needle serves him as a ladder, p. 658.

The Beetle-woman, in punishment of her perfidy, is burned by her husband in a great fire. She inflicts the human race with various diseases, but her husband pushes her with a stick farther into the fire, until she becomes silent and dies. After her death mankind contracts the diseases,* p. 657.

Vaksenukomae is wounded by a Gray Bear. Shamans are invited to cure him; they sing and dance around his bed, but to no avail. Then the Raven comes and cures him with the aid of the Dog and the Snail. Çatlo'ltq, *ibid.*, p. 178, §8.

Mink myth:

The Mink Tot'k'oäya is the Sun's son; he lives with his mother in a village. Desiring to find his father, he shoots upward one arrow after another. The first arrow sticks into the heavens, the second into the shaft of the first, and so on. At last a line of arrows is formed, by means of which the Mink ascends to the heavens. Various tribes, *ibid.*, p. 338, §1.

T'äl, who is a bad She-cannibal, is pushed by some children with a stick into the fire. She cries: "Let me out, let me out!" and is silent only after her death. Her ashes turn to mosquitoes. Çatlo'ltq, *ibid.*, p. 89.

The Supreme Being lets down a young man with his bride from the upper world to the earth. He uses for this purpose a spider's web, which is able to support twenty reindeer-loads without snapping, p. 591.

Birds shoot with their wing-feathers, p. 612.

A shaman, traveling among the worlds, stops to rest in the Land of Mice. He is requested to help a woman who is suffering from pain in her throat, but discovers on her neck a noose of grass, such as children make for catching mice. He destroys the noose, the Mouse-woman recovers, and he is paid for his services, p. 660.

A man points his penis at the nose of an old blind woman, p. 618.

A woman comes to the house of the Black Bear. He marries her and they sleep the whole winter through, p. 661.

A charmed Reindeer-buck, standing on the bank of the river, kills all passers-by, p. 661.

Métiño joins the herd of wild Reindeer and lives their life. Afterward he resumes the human form of life and becomes a great hunter, p. 662.

The Thunder-bird makes thunder and frightens the people, p. 644.

The Thunder-bird, when angry raises a violent storm which makes the earth tremble, p. 664.

The Sun-man lets down his daughter and her husband from the heavens to the earth. He puts them in a basket, adds a lot of edible roots, and lets them down on a rope made by spiders. Lower Frazer river, *ibid.*, p. 40.

The same. Çatló'ltq, *ibid.*, p. 89; Tsimshian, Boas, *Tsimshian Texts*, p. 114.

Kwótiath comes to the Village of Sharks and is invited to cure a woman who is very ill. He discovers a spear sticking out of her body, which, however, is invisible to her household. He pulls out the spear, the woman recovers, and he is paid for his services. Nutka and many other tribes, Boas, *Indianische Sagen*, p. 356, § 63.

A man touches with his penis the eyes of some old blind women and they recover their sight. Nutka, *ibid.*, p. 118.

The same. Bella Coola, Boas, *Mythology of the Bella Coola*, p. 111.

A supernatural Elk, standing with his legs spread over the river, kills all passers-by. Shuswap, Boas, *Indianische Sagen*, p. 2.

A Goat hunter joins the herd of Mountain-goats and lives their life. Afterward he resumes the human form of life and becomes a great hunter. Shuswap, *ibid.*, p. 12.

The same. Tsimshian and other tribes, *ibid.*, p. 355, § 29.

The Thunder-bird, when angry, raises a storm which carries away the house. Çatló'ltq, *ibid.*, p. 82.

Two men go to a lonely island. One of them paddles off, taking away both canoes and leaving his companion on the island. Coming home, he takes the wives of the forsaken man; but the latter is helped through a supernatural agency and finally comes back and punishes the trespasser, p. 664.

A young man, despised by his neighbors, receives shamanistic power through a supernatural agency. He comes to a wealthy man's house at the time of a ceremony and is requested to show his skill. He sings and dances. The house is filled with water. The neighbors become frightened and flee to another land, p. 665.

White reindeer are descending from heaven; brown reindeer are coming up from underground,* p. 666.

A bride brought from heaven is so fair that her beauty, when shown to the unbelieving neighbors, makes them die from carnal desire, p. 666.

Charmed door snaps at the visitor, p. 666.

A visitor wants to have a match with the Bear-eared man in lifting stones, but cannot lift his stone and is vanquished, p. 667.

The story of the woman whose vagina was armed with teeth, p. 668.

Small pieces of bodies of whales and seals are thrown into the water with the idea that they will

The Raven induces a man to go with him to a lonely island. The Raven paddles off in the boat, leaving the man behind, and, coming home, takes his wife. But the forsaken man is helped through a supernatural agency and finally comes back and punishes the Raven. Haida, *ibid.*, p. 309.

Kat'mot receives shamanistic powers through a supernatural agency. He enters the singing house of the village and is asked to show his skill. He sings and dances. The house is filled with water and seals swim around. The neighbors become so frightened that they flee to another land. Eeksen, *ibid.*, p. 95.

White reindeer are descending from heaven. Cowitchin (K'auet-cin), *ibid.*, p. 53.

A bride brought from heaven is so fair that her beauty, when shown to the unbelieving neighbors, scorches the face of one man. Lower Frazer river, *ibid.*, p. 40.

The same. Nutka, *ibid.*, p. 18.

Gya'loyak'amé comes to have a match with Wa'qaos in lifting stones, but cannot lift Wa'qaos's stone and is vanquished. Tlatlasik'oala, *ibid.*, p. 191.

The same. Bella Coola, Kwak-wuitl, Lower Frazer river, Maidu, Arapaho, et al.

Bones of salmon are thrown into the water in order to transform them into living fishes.

be transformed into living animals, p. 660.

Telling of tales kills tempests and brings back good weather, p. 668.

WEST BERING TRIBES OTHER THAN CHUKCHEE

Mountains make love and fight. Yukaghir, p. 643.

The Raven Kutq steals fresh water from the Lobster Ávvi. Kamchadale, p. 644.

The Raven enters the jaws of a dead whale and after its belly is ripped up he comes out. Koryak, p. 645.

The Raven and the Small Bird are rivals in a marriage-suit. The Raven acts foolishly and is vanquished by the Small Bird, who is very wise and is helped through supernatural agency. Koryak, p. 651.

The Raven Kuyk'nnaku snatches at a hook baited with meat and is caught. Straining with all his might, he snaps the line and carries off the hook, which sticks in his jaw. Koryak, p. 651.

The Fox takes out her eyes and pounds them with a stone, then she makes for herself instead eyes of blackberries and afterward of two small bits of clear ice. Koryak, p. 652.

Bilqula and other tribes, Boas, *Indianische Sagen*, p. 357, § 68.

Telling of a special tale kills bad weather and makes the rain cease. Lower Frazer river, Kathlamet, Boas, *Indianische Sagen*, p. 22; *Kathlamet Texts*, p. 102.

INDIAN

Mountains fight. Bella Coola, Boas, *Mythology of the Bella Coola*, p. 28.

The Raven steals fresh water from the Eagle K'anó'k. Tlingit and other tribes, Boas, *Indianische Sagen*, p. 330, § 5.

The Raven is swallowed by a whale and kills the whale. When the whale's stomach is laid open, he flies out. Tlingit and other tribes, *ibid.*, p. 330, § 15.

The Raven and the Small Bird are neighbors. The Raven acts foolishly in his encounter with supernatural beings, while the Small Bird is very wise and therefore successful. Nutka, *ibid.*, p. 165.

The Raven Yetl steals the bait from the fish-hooks of some fishing people. He holds on to the bottom of the boat, until his nose is broken off, when he is hauled to the surface. Tlingit and other tribes, *ibid.*, p. 330, § 8.

The Coyote takes out his eyes and flings them upward; they are caught by a gull. He makes for himself other eyes of some berries. Shuswap, *ibid.*, p. 7.

A young girl is carried off by the Raven. Her brother follows and finds the house of the Raven, but he is afraid to enter. At last he succeeds in vanquishing the Raven and takes his sister back. Russianized Yukaghir of the Kolyma, p. 653.

The Raven makes all his visitors go into a very hot sweat-room, where he kills them; but the youngest brother of the slain contrives to push the Raven into the sweat-room and kills him. Russianized Yukaghir, p. 653.

The Raven Kutq marries a Salmon-woman. In his absence Miti kills her and cooks her flesh. The Raven comes home and dines on the cooked salmon, but the Salmon-woman suddenly steps out of the dark storeroom, denounces Miti, and departs for the sea, notwithstanding the entreaties of the Raven. Then the Raven's family starves again. Koryak, Kamchadale, p. 659.

A She Giant carries away children in a basket, but they succeed in making good their escape. Koryak, p. 623.

The tale of the she monster, Yagishna. Russianized Chuvantzy, p. 623.

People pass over the river on the leg of a supernatural being, stretched across like a bridge. Yukaghir, p. 626.

Small pieces of bodies of whales and seals are thrown into the water

A young girl is carried off by a Raven. Her brother follows and finds the house of the Raven, but he is afraid to enter it. Then he comes back and brings his neighbors along. They overcome the Raven's family and take back the woman. Tsimshian, *ibid.*, p. 277.

A visitor's endurance is tried with a hot sweat-bath, which is heated more than usual for that purpose. Chinook, Ponka, *ibid.*, p. 329, § 126.

The Raven or the Mink marries a Salmon-woman. The villagers are starving. The Salmon-woman fumbles among her teeth and then throws something into the water. It proves to be a salmon, which is cooked and serves as food for the family. After a while the Salmon-woman, angered by some hasty words of her husband, departs for the sea, notwithstanding his entreaties, and the family starves again. Nutka, Newetsee, Biquila, etc., *ibid.*, p. 332, § 24.

A monster Woman does the same. Various tribes.

The tale of Sneneiq. Various tribes.

The same. Various tribes.

Bones of salmon are thrown into the water in order to trans-

with the idea that they will be transformed into living animals. Koryak, Kamchadale, p. 660.

The tale of One-Sided Man. Russianized Yukaghir, p. 662.

A woman comes to the house of the Black Bear, who marries her and they sleep the whole winter through. Yukaghir, Kamchadale, Lamut, p. 660.

The Hare-boy kills the young Wolf, his companion, and is denounced by the Wolf's mother. He contrives to escape retribution from all beasts friendly to the Wolf, who are called to a singing-house for a feast. Yukaghir, p. 666.

A magic line belonging to the family of Kuykinnaku is stolen by neighbors and fastened to a harpoon. Emémkut assumes the shape of a whale, induces the villagers to harpoon him, and then carries off the line. Koryak, p. 667.

The story of the vagina armed with teeth. Yukaghir, p. 667.

form them into living fishes, Bilqula and other tribes, Boas, *Indianische Sagen*, p. 357, § 68.

Kasā'na, the One-Sided Man. Bilqula, *ibid.*, p. 256.

The same. Bella Coola, Boas, *Mythology of the Bella Coola*, p. 111.

K'ā'iq kills the young Wolf A'cicin and is denounced by an old woman. He contrives to escape retribution from the Wolf's neighbors, who are invited to a singing-house for a feast. Çatlo'tiq, *ibid.*, p. 76.

A man steals the harpoon of a fisherman, assuming the shape of a salmon and inducing the fisherman to harpoon him. Bilqula, Comox, etc., *ibid.*, p. 359, § 130.

The same. Various tribes.

TRADITIONS COMMON TO THE WEST BERING TRIBES, THE ESKIMO,
AND THE INDIANS.¹

	<i>West Bering tribes</i>	<i>Eskimo</i>	<i>Indians</i>
A woman carried away by a whale.	Chukchee	Eskimo	Bilqula, Tsimshian, etc.
A man simulates death and is carried away by a monster.	Chukchee, Yukaghir	Eskimo	Various tribes
A man who marries a Bird-woman.	Chukchee, Yukaghir	Eskimo	Various tribes

¹ The Raven tales of Alaskan Eskimo recorded by Nelson are not taken into consideration, as they are probably borrowed from Indians.

	<i>West Berling tribes</i>	<i>Eskimo</i>	<i>Indians</i>
A man with supernatural power gives to another man a self-moving canoe.	Chukchee	Eskimo	Kwakiutl, etc.
A man orders for himself several pairs of boots or mittens to be worn on a journey.*	Chukchee, Russianized Yukaghir	Eskimo	Various tribes
The log as a husband of women.	Yukaghir	Eskimo	Tlingit
The hero revives his companions killed in a fighting match, after having killed their victors.	Chukchee	Eskimo	Shuswap
Magic flight.	Various	Eskimo	Various tribes
A dog marries a woman and has children by her; they afterward assume human shape and finally become the ancestors of the tribe.	Chukchee	Eskimo	Various tribes
Excrement speaks and gives warning.	Chukchee	Eskimo	Various tribes
Artificial animals are sent to kill the enemy.	Chukchee	Eskimo	Tsimshian, Comox
Birds of prey are caught by a boy, who lies down and simulates death, alluring them to perch on his body.	Chukchee	Eskimo	Tsimshian, etc.
A suitor spurned by girls is made strong or handsome by supernatural agency; he is then sought by the same girls, but spurns them in turn.	Chukchee	Eskimo	Shuswap, Micmac
Small pieces of whale's flippers or bones of fish, when put in water turn to living whales or fishes. Tips of ears of animals turn to whole skins or to living animals.	Various	Eskimo	Various tribes

SUMMARY

Summing up the tales here tabulated, we find twenty-six of similar scope¹ among the Chukchee and the Eskimo, laying aside the general similarity of the religious beliefs of these two tribes.

The cases of similarity among the Chukchee and the Indian

¹ Three of them with no very characteristic details.

number thirty-three.¹ These are consequently somewhat more numerous than the other cases; but the first group contains several tales that are identical, while the second consists chiefly of tales which display similar episodes only. On the whole both groups are perhaps of equal importance.

The cases of similarity between tales of the other West Bering tribes and those of the Eskimo number twelve.² Two of these are complex tales with several episodes.

The cases of similarity between tales of other West Bering tribes and those of the Indians number eighteen, five of which are complex tales consisting of several episodes. On the whole the last group of tales exhibits far more striking analogies than the preceding one.

The number of similar tales found in the folklore of the Chukchee, the Eskimo, and the Indians is thirteen.³

The cases of similarity found in the folklore of the other West Bering tribes, the Eskimo, and the Indians are six in number⁴; five of these belong also to the Chukchee.

These comparisons strengthen the conclusion that, while Chukchee folklore is closely related to the folklore of both the Eskimo and the Indians, that of the other West Bering tribes shows comparatively much greater similarity with Indian than with Eskimo tradition.

¹ Two of them with no very characteristic details.

² One of them with no very characteristic details.

PHYSICAL ANTHROPOLOGY OF THE JEWS. I.—THE CEPHALIC INDEX

By MAURICE FISHBERG

The physical anthropology of the contemporaneous Jews has been one of the most debated questions in anthropology. From the comparatively large number of measurements taken on living subjects, authorities have drawn different conclusions. Some, like Jacobs, Andree, and others, have maintained that the Jews are a pure race, the descendants of the primitive Semites, and almost entirely unmixed with foreign blood, while others have stated that the results of the study of the physical characteristics of the Jews are against this view. They argue that nearly all the contemporaneous peoples known to be of Semitic origin are dolichocephalic, as is the case of the Arabians, the Abyssinians, the Syrians, etc.; while the modern Jews of Europe are mesocephalic or even extremely brachycephalic.¹ Dr M. Alsberg² brings evidence that even the ancient Hebrews were already a mixed race. It is further alleged that anthropometric measurements reveal two types of head-form among the modern Jews,—the long and the round,—which evidently tend to indicate that the Jews are a mixed race.³ The fact that the brachycephalic

¹ I must emphasize that this is true of the Jews of Europe. Those of the Caucasus are hyperbrachycephalic. Pastukhof's measurements show a cephalic index of 85.2. ("Observations Anthropologiques au Caucase" (in Russian), *Publications of the Caucasian Royal Geograph. Soc.*, xv, pp. 35-38.) The Jews of Daghestan (mountaineers) have even a cephalic index of 87.0. On the other hand those of Africa and Syria have a purely dolichocephalic type of head. While this paper is passing through press I have succeeded in obtaining measurements of thirty-six Jews, natives of Tunis, Morocco, and Syria, not one of whom had a cephalic index above 78.

² *Rassenmischung im Judentum*, Hamburg, 1891.

³ On this point see particularly Stieda, "Ein Beitrag zur Anthropologie der Juden," *Archiv für Anthropologie*, xiv, pp. 167-182.

type by far exceeds in number those of the dolichocephalic type is explained by Stieda, who states that this points to a long, lasting, and successful interbreeding of both types. Majer and Kopernicki¹ conclude that the Jews constitute physically two types, and add that the brachycephalic Jews are usually dark brunette and the dolichocephalic Jews are blond—a point of importance, as they think it tends to show that the long-headed blond Jews have their origin in Indo-Germanic intermixture. In the same sense we find Weisbach² speaking of two cranial types of the Jews—one long and with a narrow face, narrow but very long nose, and thin lips; the other a round-headed type with a broad face, short, broad, small nose, and thick lips. Lombroso,³ again, basing his deduction on the results obtained by measuring 112 Italian Jews, concludes that they are a mixed race, which manifests itself in a great variability and differentiation of their head-form, a condition which is the most important sign of racial intermixture.

TABLE I.—STATISTICS OF MEASUREMENTS OF 2373 INDIVIDUALS

Country	Number	Cephalic Index	Dolichocephaly 75 — 79	Mesocephaly 75 — 80	Brachycephaly 80 +	Observer
Galicia	413	{ 83.6 81.7	5.63	17.67	78.69	Majer and Kopernicki
Russia	100	83.12	1.00	13.00	86.00	Blechman
Russia	100	82.5	1.00	18.00	81.00	Weissenberg
Russia	67	82.2	—	17.90	82.1	Stieda
Lithuania	69	81.7	—	15.94	84.06	{ Talko-Hryniewicz
Ukraine	438	82.9	0.91	13.47	85.61	{
Italy	112	82.14	2.68	19.64	77.68	Lombroso
Various	19	82.2	—	26.3	73.8	Weisbach
Russia	139	80.9	2.16	31.65	66.19	Yakowenko
Bosnia	55	80.1	7.3	34.5	58.2	Glück
Baden	86	83.5	—	11.6	87.8	Ammon
Caucasus	53	85.2	—	1.7	98.3	Pantukhof
England	363	80.0	—	—	—	Jacobs
Poland	325	81.9	—	—	—	Elkind
Italy	34	81.6	—	—	—	Livi

¹ *Charakterystyka fizyczna ludności galicyjskiej*, Krakow, 1877 and 1885.² *Körpermessungen verschiedener Menschenrassen*, Berlin, 1878, pp. 212-225.³ *L'antropometria e le scienze moderne*, Torino, 1894.

By a careful examination of the accompanying table I, which gives the results of anthropometric measurements, it will be seen that there is a remarkable uniformity in the cephalic index of modern Jews. Setting aside the Caucasian and also the African Jews, we find that the cephalic index of nearly all European Jews is between 81.5 and 83., showing only a limited variability, which may be attributed to the usual discrepancies between the different series of measurements of a single and homogeneous race. Another remarkable fact is the striking absence of dolichocephaly, varying from one percent in Blechman's to 7.3 in Glück's series; and at the same time there seems to be a marked preponderance of the brachycephalic type—the results of all observers show that over 60 percent of the individuals measured had a cephalic index of over 80.

This is about as far as we can go while attempting to study the head-form of the Jews from the accumulated anthropological literature of today. But, as is well known to every student of anthropology, the average and even the median is no safe criterion of the physical characteristics of a given race, for we now know that this is quite often misleading. What is of most interest is the distribution of the units obtained by the anthropometric measurements of the body, which give us an idea of the degree of variability. This is best obtained by seriation and co-ordination of the figures; in other words, by arranging the figures in an ascending or descending order, each expressing the cephalic index. And what will be of more use in conveying an idea of the relative distribution of the various values obtained, is a seriation expressed graphically by means of curves, for by such means we may frequently find one or even several indices around which are clustered the largest number of heads, and we can then often discover two or even more cranial elements in a population—a result which can never be obtained by a mere statement of the average or median cephalic index.

The results shown in the accompanying diagram (A) were ob-

tained by the measurement of 715 Jews living in New York City, 500 of whom were men and 215 women. All were over twenty years of age, many over fifty. Their nativity was:

Russia and Poland.....	235,
Austria.....	180,
Roumania.....	68,
Hungary.....	57,
United States.....	76,
Other countries.....	99.

Those mentioned as born in the United States were, as a rule, of foreign parentage; among those of "other countries" were Jews from England, Germany, France, Italy, Sweden, Palestine, some even from Africa; but the number of each is too small to be classified by their country of birth.¹ The importance of investigating Jews from all countries will appear later.

The cephalic index was obtained by taking first the long diameter of the head from the glabella to the most distant point of the occiput; second the widest diameter, obtained by searching with the points of the calipers along the temples over the ears and somewhat posteriorly. The width $\times 100$ divided by the length equals the cephalic index.² In order to avoid error the measurements were always repeated and the mean of the two recorded.

Of the 500 men we find that the *arithmetic average* cephalic index is 82.12; the *median* 81.77, a difference of but 0.35. Between the one having the *average* cephalic index and the one having the *median* index were nineteen individuals. The minimum index was 73.60, the maximum 94.76. Arranged in groups

¹ So soon as I have obtained data representing a sufficient number of individuals from each country, I hope to publish the material arranged according to the country of birth.

² For the calculation of the cephalic index I have lately been using the tables published by Carl M. Ffirst, entitled, *Index-Tabellen zum anthropometrischen Gebrauch*, Jena, 1902. They have saved me much tedious labor.

according to Deniker's scheme, we find the following distribution:

Type	Cephalic Index	Number	Percent
Dolichocephalic.....	less than 77	26	5.2
Subdolichocephalic....	77 to 79.6	63	12.6
Mesocephalic.....	79.7 to 81.9	111	22.2
Subbrachycephalic.....	82 to 85.2	228	45.6
Brachycephalic.....	85.3 to 86.9	50	10.0
Hyperbrachycephalic...	87 and more	22	4.4
Total.....		500	100

Each individual index is found to be distributed as follows:

Cephalic Index	Number	Percent
73	3	0.6
74	6	1.2
75	5	1.0
76	12	2.4
77	29	5.8
78	32	6.4
79	41	8.2
80	63	12.6
81	59	11.8
82	74	14.8
83	56	11.2
84	46	9.2
85	34	6.8
86	18	3.6
87	4	0.8
88	10	2.0
89	3	0.6
90	1	0.2
91	1	0.2
92	1	0.2
93	1	0.2
94	1	0.2

To render the results of these figures more graphic, it is advisable, as we have said, to construct a curve. If they represent a true homogeneous type, which is more or less characteristic of the Jewish race, that fact will be made clear. If the Jews are a mixed race, as a result of intercrossing of the long and the round types of head-form, the effects of such interbreeding will be

shown boldly either by the curve having a double apex or by being flattened at the top, at the same time showing an expansion in one or both sides. In the diagram (A) each index is marked on the axis of the abscissæ, and the percentage of persons

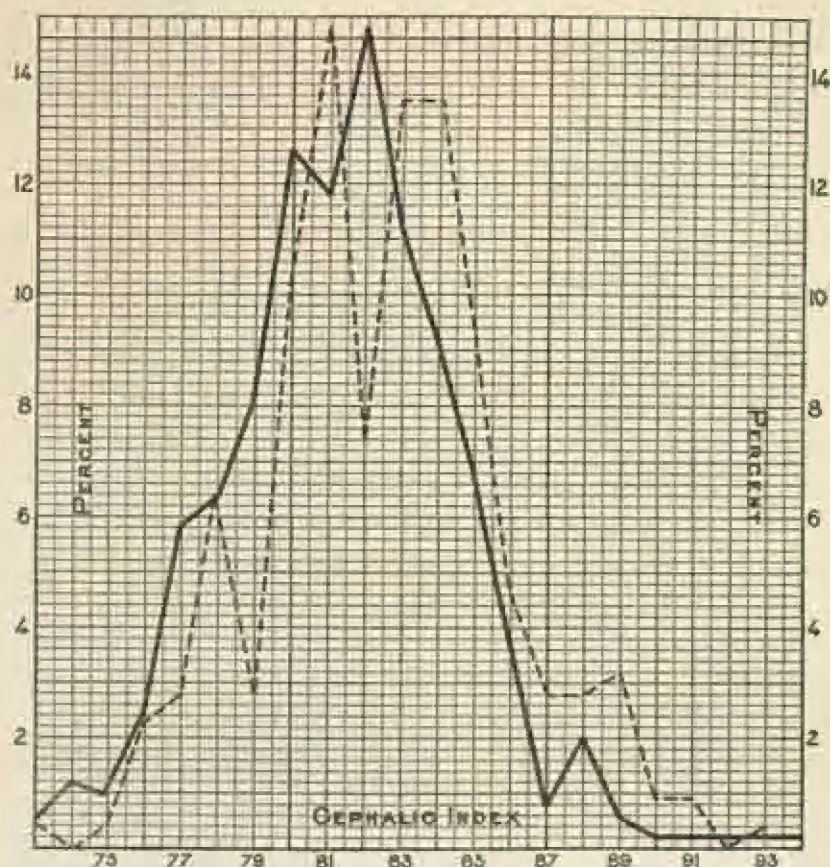


DIAGRAM A.—Cephalic index of 500 Jews (—) and 215 Jewesses (----).

having a given index is indicated on the ordinates; in other words, the height of the curve at each point indicates the number of heads (per 100) having the cephalic index marked at the base of the vertical lines. Thus it is shown that 12.6 percent of the heads measured had an index of 80; 14.8 percent an index of 82, and so on. It will also be observed that the curve

culminates at its apex with the index of 82, corresponding with the average and also with the median. At this point also, it is observed, is the largest percentage of persons, and around them are clustered the majority of heads, — those having larger indices on the right side, and those having smaller indices on the left. This is shown graphically by the steady descent of the curve on both sides, forming a more or less acute pyramid whose apex points almost in the middle. "A sharp pyramid generally denotes a homogeneous people. If they were all precisely alike, a single vertical line, one hundred percent, would result."¹ The slight indentation of the curve at the index of 81 is due merely to chance — there happened to be a few more individuals among those measured which had an index of 80. It is so slightly elevated, and the interval between this and the real apex is so small (only one unit), that we cannot ascribe it to be due to racial intermixture. These minor apices are discussed in detail by Livi and Ammon, and are shown to be usually the result of unavoidable error in observation and calculation of the groups of indices, which errors have an influence on the appearance of the curve by showing here and there a lower percentage with an indentation of the line, and an occasional elevation of the curve as a result of a higher percentage of a given index. The smaller the number of observations, the more irregularity in the curve; the larger the number of observations, the smoother the curve, although the irregularities never disappear entirely.²

These minor apices are obliterated by "smoothing" the curve as advised by Livi and Ammon. This is best done by drawing the curve on a scale having two units on every abscissa, i. e., by adding the units of two indexes and drawing the curve accordingly. This we have done, and the result is a fairly

¹ W. Z. Ripley, *The Races of Europe*, N. Y., 1899, p. 114.

² For a detailed mathematical treatment of these questions see R. Livi, "L'indici cefalico degli Italiani," *Archivio per l'Antrop.*, xvi, pp. 223-303; also *Antropometria militare*, Roma, 1896; Otto Ammon, *Die Natürliche Auswahl beim Menschen*, Jena, 1893, pp. 27-29; *Zur Anthropologie der Bodener*, Jena, 1899, pp. 104-111.

smooth pyramid (as shown in diagram B) in which two apices cannot be discerned. If the Jews were a mixed race of two or

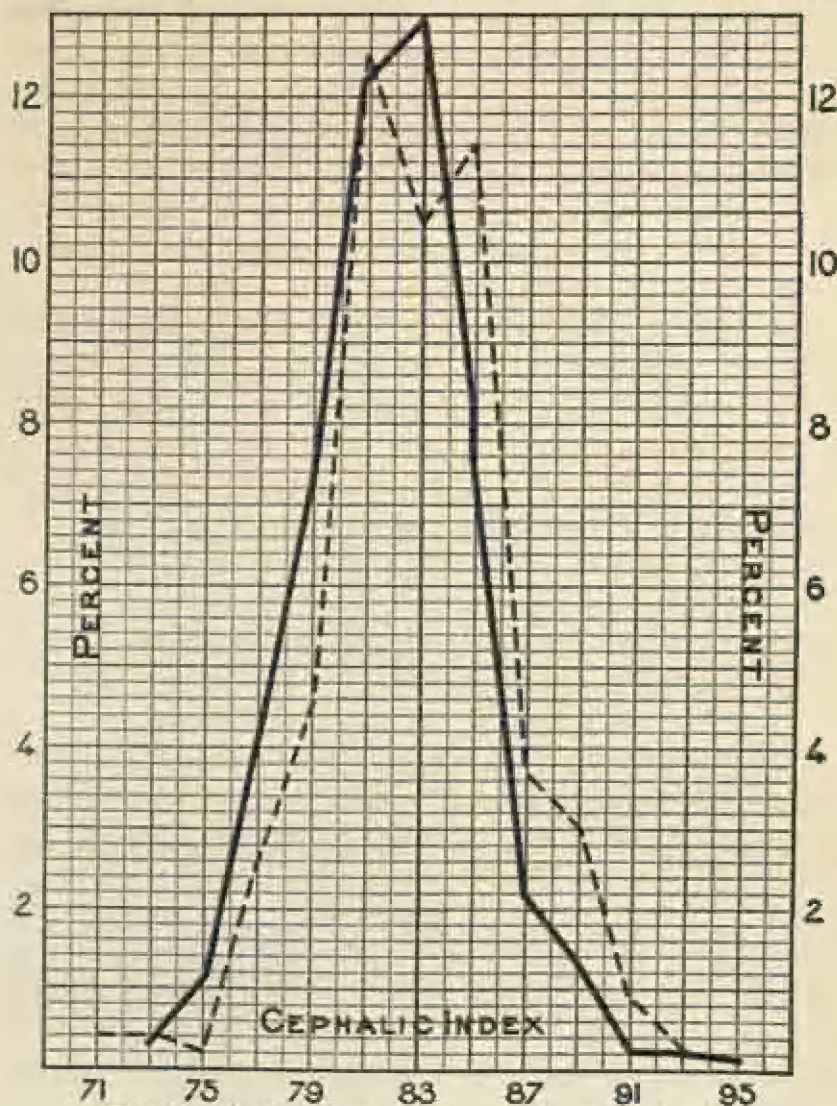


DIAGRAM B.—Cephalic index of 900 Jews (—) and 215 Jewsess (---).

more types of head-form, as Stieda, Majer and Kopernicki, Talko-Hryniewicz, Lombroso, and others claim, we should not obtain such a narrow pyramid; the various racial elements entering

into the composition of the modern Jews would manifest themselves by either a flattening of the curve at the top with an extension of one or both of its legs sidewise,—in fact, showing no apex at all,—or the curve would indicate two or more apices according to the types of racial elements that made up the population investigated. But as we find our curve to be a fairly smooth and narrow pyramid, with its apex at the cephalic index of 82 (the median index), we may infer that our contemporaneous European Jews are a homogeneous race, showing no intermixture of foreign blood.

The homogeneity of the cranial type of the modern Jews was rather unexpectedly disclosed by these figures. To test their accuracy it was decided to analyze in seriation and coördination the figures of other investigators of the anthropology of the Jews, thus obtaining from available literature 571 measurements of Jewish heads. These, in addition to our own figures, are collated in table II.¹ The curve drawn from these measurements (diagram D) shows a yet more striking homogeneity of the cranial type; the pyramid is smoother and narrower than that drawn from only five hundred heads. Notwithstanding the fact that it represents Jews from various countries, of various social conditions, living under different climates and environments, we find that over 80 percent of the heads are within the limits of seven units (between the cephalic index of 78 and 85); 70 percent are within the limits of five units (from 79 to 84), and 50 percent of all the observations are between the limits of three units (80 to 83). Such homogeneity of the cranial type has not been observed in any other civilized race.

¹ The figures in this table were taken from Stieda, "Ein Beitrag zur Anthropologie der Juden," *Archiv für Anthropologie*, xiv, pp. 61-71; Blechman, *Ein Beitrag zur Anthropologie der Juden*, Dorpat, 1882; Weissenberg, "Die südrussischen Juden," *Archiv für Anthropologie*, xxiii, pp. 342-443, 531-579; Lombroso, *L'antiermittimo e le scienze moderne*, appendix, Torino, 1891; Yakowenko, *Materials for the Anthropology of the Jews* (in Russian), St. Petersburg, 1898; and Pantukhof, *Anthropological Observations in the Caucasus* (in Russian), Tiflis, 1893.

The importance of the study of anthropological data by means of seriation will be more appreciated when we cite the following example: Lombroso,¹ in his study of the physical anthropology of the Jews of Turin, Italy, as compared with the Catholics amongst whom they live, concludes that the Jews are a mixed

TABLE II.—CEPHALIC INDEX OF 1071 JEWS OF EUROPE AND THE CAUCASUS

Index	Sireta	Blechnau	Welschberg	Lombroso	Yakovlev	Pastakhof	Flahberg	Total	Percent
70		1		1				1	0.09
71				2				1	0.09
72								3	0.18
73			1		1		3	5	0.46
74					2		6	8	0.74
75	1	2		1	1		5	10	0.93
76	1		2	3	5		12	23	2.05
77	3		3	4	10		29	49	4.57
78	4	1	4	5	12	4	32	62	5.80
79	3	10	6	10	16	5	41	92	8.60
80	6	9	12	5	15	2	63	112	10.46
81	13	13	12	13	18	3	59	131	12.23
82	12	12	16	15	20	3	74	152	14.20
83	8	16	7	11	12	8	56	118	11.01
84	4	8	14	11	6	2	46	91	8.50
85	4	8	12	9	10	5	34	82	7.65
86	6	9	6	8	3	5	18	55	5.13
87	1	8	1	6	1	1	4	22	2.05
88	2	1	2	2	2	1	10	20	1.86
89		2		3	1	3	3	12	1.12
90				2		4	1	7	0.65
91				1	1	3	1	6	0.56
92				1		1	1	3	0.28
93					2		1	3	0.28
94						3	1	4	0.37
95					1			1	0.09
Total	67	100	100	112	139	53	500	1071	99.95

race, because the higher forms of brachycephaly occur among them less frequently than among the Catholic population of Turin, while the dolichocephalic type is met with amongst Jews about eight times more often. This, according to Lombroso, points to a great variability and differentiation of the type of Jewish head-form, and is due to racial intermixture. If Lombroso

¹ Loc. cit.

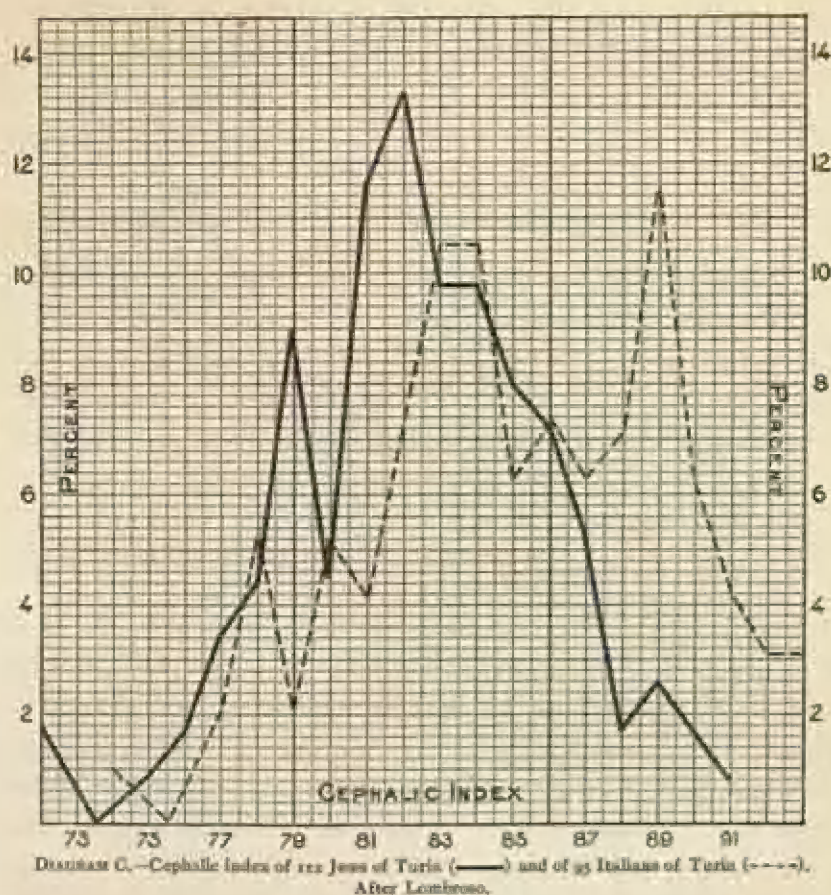
had arranged his figures in an ascending order and then observed their percentage of distribution in seriation, he would not have fallen into such a grave error. Fortunately, Lombroso records in his monograph the figures expressing every individual cephalic index, and we may utilize these for the purpose of constructing a curve. The percentage of distribution of each index is as follows:

<i>Cephalic Index</i>	<i>Jews Percent</i>	<i>Italians Percent</i>
71	0.9	—
72	1.7	—
73	—	—
74	—	1.0
75	0.9	—
76	1.7	—
77	3.5	2.1
78	4.5	5.2
79	9.0	2.1
80	4.5	5.2
81	11.6	4.2
82	13.3	7.3
83	9.8	10.5
84	9.8	10.5
85	8.0	6.3
86	7.1	7.3
87	5.3	6.3
88	1.7	11.5
89	2.6	6.3
90	1.7	4.2
91	0.9	3.1
92	0.9	3.1
93	—	3.1

The curves (diagram C) constructed from the above figures give a result quite contrary to that reached by Lombroso. The variability and differentiation are manifested by the zigzag curve which represents the Italians of Turin, but we cannot discern which is the real apex. The curve representing the Jews is a fairly regular pyramid, considering the small number (112) of heads measured. The minor apex can be observed to be evidently due to chance—there happened to be a smaller number of individuals than was expected with a cephalic index of 80. The real apex, it will be noted, corresponds to 82—the average and the

median apex. This is not the case with the curve representing the Catholics.

It is peculiar that while the Jews appear to have a homogeneous head-form, this is seemingly not the case with the Jewesses.



This will be seen by an analysis of our measurements of Jewish women. Of the 215 heads of women, we find that they are slightly more brachycephalic than the men, the former having a cephalic index of 83, against 82.12 for the latter. The results of other observers concerning the differences in the cephalic index of Jewish men and women will be seen in the following table:

TABLE III.—CEPHALIC INDEX OF JEWS AND JEWESSES

	Cephalic Index	
	Men	Women
Talko-Hryniewicz ¹	82.30	83.00
Majer and Kopernicki ²	81.70	80.30
Weissenberg ³	82.50	82.40
Elkind ⁴	81.90	82.90
Yakowenko ⁵	80.90	81.24
Fishberg.....	82.12	83.00

These figures show that no definite conclusion can be drawn as to whether the Jewesses are more brachycephalic or dolichocephalic than are the Jews. While those measured by Yakowenko and Talko-Hryniewicz agree with ours, showing the women more round-headed than the men, the rest show the reverse, and those of Weissenberg are practically equal. This confirms Deniker's observation that "the difference between the cephalic index of men and women hardly exceeds one unit—that is to say, the degree of personal error in the observation. This difference is, in any case, less than the discrepancies between the different series of a single and homogeneous race."⁶

The median cephalic index of the Jewesses measured by us is 83.33. Between the average and the median there were seven individuals. Grouping the indices as for the men we find the following distribution :

¹ "The Anthropology of the Jews in Ukraine and Lithuania," *Proc. Russian Anthropological Society*, St Petersburg, 1892, p. 80.

² "Charakterystyka fizyczna ludności galicyjskiej," *Zbiór wiadom. do antropol. Krajowej*, IX, pt. 2, Krakow, 1885, p. 84.

³ "Die andrassischen Juden," *Archiv für Anthropol.*, XXIII, 1895, p. 98 of reprint.

⁴ *Centralblatt für Anthropol., Ethnol. und Urgeschichte*, III, p. 66.

⁵ *Materials for the Anthropology of the Jewish Population of Mogilew* (in Russian), St Petersburg, 1895, p. 183.

⁶ Deniker, *Races of Man*, London, 1900, p. 75.

Dolichocephalic,	8 = 3.8 percent,
Subdolichocephalic,	21 = 9.8 "
Mesocephalic,	58 = 26.8 "
Subbrachycephalic,	85 = 39.6 "
Brachycephalic,	19 = 8.8 "
Hyperbrachycephalic,	24 = 11.2 "

which shows a smaller percentage of long-headedness (13.6 percent had an index below 80, against 17.8 percent in men) and a larger percentage of round-headedness (20 percent in Jewesses, 14.4 in Jews).

The distribution of the individual indices was as follows:

<i>Cephalic Index</i>	<i>Number</i>	<i>Percent</i>
72	1	0.4
73	1	0.4
74	—	—
75	1	0.4
76	5	2.3
77	6	2.8
78	14	6.5
79	6	2.8
80	22	10.2
81	31	14.7
82	16	7.4
83	29	13.5
84	29	13.5
85	30	9.3
86	10	4.6
87	6	2.8
88	6	2.8
89	7	3.2
90	2	0.9
91	2	0.9
92	—	—
93	1	0.4

Carefully examining the above figures in connection with their graphic representation in our curve (diagrams A, B), we find that the Jewesses do not represent such a homogeneous type of head-form as do the Jews. We notice two apices—one at 81 and one at 84; the minor apex at 78 may be considered as due to chance for the reasons explained above while describing the curve for the men. The striking irregularity in the curve of the

head-form of the Jewesses is remarkable from another viewpoint. Throughout the animal kingdom the males are always known to show wider limits of variation in mental and physical character than do the females. Darwin¹ has brought together many examples to this effect, both in man and the lower animals; and Havelock Ellis² also shows that there is a greater tendency in man to diverge from the type than in woman. With the Jews, however, the reverse of the rule, so far as the head-form is concerned, seems to apply, since it is the women who show the greater variability and differentiation. Mr Joseph Jacobs lays great stress on the comparatively small variation of type among Jewesses as compared with that of the Jews.³ This is probably true of pigmentation and facial features, as we shall see when we come to speak of these subjects in presenting the results of our next studies. But we want to point out at present that pigmentation and facial features are racial characteristics which are known to be influenced by environment, and particularly by social selection, as has been so ably shown by Ripley.⁴ The head-form, on the other hand, is a racial character influenced but little, if at all, by environment, nutrition, social selection, etc., and when we find a greater variability in women in this regard we may consider it to be characteristic.

In order to test our own results, we constructed a curve from the measurements recorded by other writers — the fifty Jewesses of southern Russia measured by Weissenberg⁵ and the eighty Jewesses of Mogilew, Russia, measured by Yakowenko.⁶ These 130 heads were combined with those of our 215 Jewesses, making

¹ *Descent of Man*, chap. viii; *Variation of Animals and Plants under Domestication*, vol. II, chap. xiv.

² *Man and Woman*, London, 1893, chap. xvi.

³ "On the Racial Characteristics of Modern Jews," *Jour. Anthropol. Inst.*, xv, p. xxviii, of reprint.

⁴ *The Races of Europe*.

⁵ "Die südrussischen Juden," *Archiv für Anthropologie*, xxiii, p. 98 of reprint.

⁶ *Materials for the Anthropology of the Jews* (in Russian), St Petersburg, 1898, p. 183.

a total of 345 heads of Jewish women, a number that may be expected to give definite results. The curve agrees with our own in that it shows great variability, as may be seen by the two apices which it presents (diagram D). This peculiarity of the

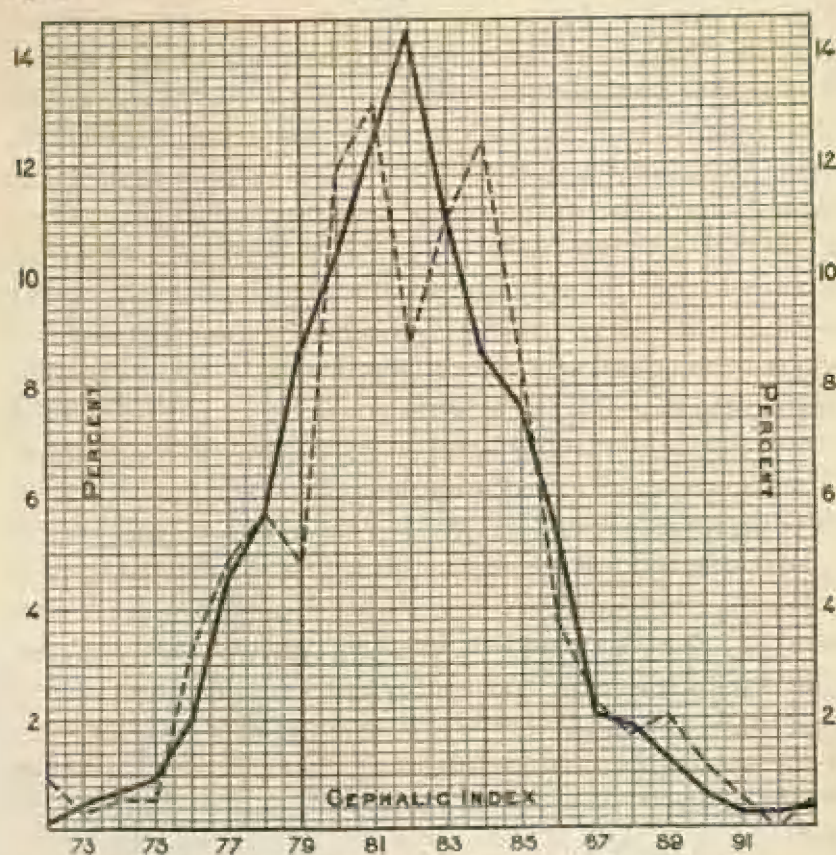


DIAGRAM D.—Cephalic index of 1072 Jews (—) and 345 Jewesses (---).

cranial type of the Jewess is of sufficient interest to merit further investigation.

From our study of the head-form of the modern Jews we find that they present a homogeneous type, having a cephalic index of about 82. From a study of the seriations of the cephalic index, we can safely state that no racial intermixture can be discovered. How are we to account for the homogeneity of the

modern Jews? All the peoples known to be of Semitic origin, as the Syrians, Arabians, Abyssinians, etc., are found to be at the lower limits of variation as to head-form, having an index ranging from 74 to 77, i. e., they are extremely dolichocephalic. We know by analogy with other races which have originated from a mixture of brachycephalic and dolichocephalic elements, that the resultant race, during the course of persistent intermarriage, presents either one or the other type of head-form. This is considered to be the result of a process of natural selection—one of the types sooner or later succumbs in the struggle for existence, and by its extinction gives way to the other type. This hypothesis is ably expounded by Otto Ammon¹ for the brachycephaly of the contemporaneous inhabitants of Baden, faced by the fact that the skulls of the ancient Germans (*Reihengraber*) of the same region are of dolichocephalic type.

But the most frequent result of interbreeding of two types of head-form is known to be the continued coexistence of both types, notwithstanding uninterrupted intermarriage for centuries. F. von Luschan,² in his study of Greeks in Lycia, shows that such is the case. The curve drawn for that population shows that there are two apices—one culminating at a cephalic index of 75 and the other at 88, while heads with indices between 78 and 84 are practically absent. Von Luschan's explanation is that the higher index corresponds to the Armenians, Turks, and other brachycephalic races of Asia Minor, who have continually intermarried with the descendants of the primitive dolichocephalic Greeks.

Prof. Franz Boas, in his study of the physical anthropology of the American Indians, has shown that the variability of the type of head-form is greater in every race in which it can be shown that an intermixture of two types has taken place. Thus, the curve for the western Ojibwa presents two apices, one at 80 and

¹ *Die Natürliche Auslese beim Menschen*, Jena, 1893.

² "Die Tachadschy und andere Uebersreste der alten Bevölkerung Lykiens," *Archiv für Anthropologie*, xix, pp. 31-35; *Rassen in Lykien, Milyas und Kibyratis*, Wien, 1889.

one at 83. The same is the case with the eastern Ojibwa and also with the Ottawa and Menomoni Indians, all of whom show two maxima of cephalic index. "That these maxima are not due to chance," says Professor Boas, "is conclusively proven by the fact that it appears in each of the three curves, and also by the comparison of the curves for men, women, and children. The distribution of these indices must be explained by the distinctive characters of the laws of heredity, which imply that in the case of an intermixture of two types no middle type arises, but that generally there is a reversion (*rückher*) to the parental form. By implication I am consequently justified in believing that we deal here with a mixture of two types, one with a cephalic index of about 80, the other with an index of about 83."¹

Applying the same principles to the Jews which we have studied, we must assume that if there occurred any intermixture with other races, it was with the inhabitants of Asia Minor and the Slavonians of eastern Europe (both mostly brachycephalic), among whom they have dwelt for centuries. The resultant race of Jews should, under the circumstances, show a curve with a double apex — one culminating somewhere at 75 to 78, corresponding with the Semitic element, the other pointing at an index somewhere above 82, corresponding with the cephalic index of the races with whom the Jews have intermarried. As we have seen in the course of this paper, this is not the case, since the Jews present a homogeneous type of head-form without any indication of racial intermixture. If the modern Jews were Semites, we should find them to be long-headed; if the Semitic element was represented amongst them to any appreciable degree, we should find it in our study of the seriation of their cephalic index. But the small percentage of long-headedness we do find among modern Jews is readily accounted for by ascribing it to the result of individual variation and the unavoidable personal error of observation.

¹ Franz Boas, "Zur Anthropologie der nordamerikanischen Indianer," *Zeitschrift für Ethnologie*, 1895, XXVII, p. 401.

This anomalous condition can be explained by the assumption that the Jews may have been round-headed originally. This is at present difficult to prove, because we have almost no skulls of the primitive Hebrew to verify this assertion. Lombroso¹ brings the measurements of five Hebrew skulls obtained from the catacomb of Saint Calixtus in Rome, dating back to 150 A.D., and he aptly remarks that these skulls are of great importance because, at the period from which they are derived, there could not yet have been any considerable racial intermixture of the Jews with others, hence the cranial type which they represent should be considered pure. The *cranial* indices of these skulls are 80, 76.1, 78, 83.4, and 75.1, which means an average cephalic index of the living of 80.5, differing by far from the cephalic index of the non-Jewish Semites. Of course no conclusion can be drawn from only five skulls, still the fact that among these we find not one dolichocephalic and two brachycephalic skulls, points strongly against the opinion that the ancient Hebrews were a purely dolichocephalic race. In this connection it should be mentioned that Luschan has suggested that a greater part of the ancient Hebrews may have been derived from the Hittites, a brachycephalic race which flourished in Syria and Asia Minor about 1500 B.C. Their descendants in modern times are shown by the same authority, and recently also by Jensen,² to be, besides the Jews, the Armenians, the Turks, the Greeks, and others. Luschan shows that even the physiognomy of the modern Armenians, particularly the convex aquiline nose, considered at present to be peculiarly Jewish, is, in fact, Armenian, and the same is true of the pigmentation, etc.³ Lombroso⁴ accepts this view in its entirety.

¹ *L'antropologia e la scienza moderna*, Torino, 1894, appendix.

² *Hittiter und Armenier*, p. 63.

³ F. von Luschan, "Die anthropologische Stellung der Juden," *Korrespondenz-Blatt für Anthropologie, Ethnologie und Urgeschichte*, xxiii, 1893, pp. 94-102. He summarizes that the modern Jews are composed, first, of the Amorites, whom he considers as Aryans; second, of the Semites; third, and chiefly, of the descendants of the ancient Hittites. With these three important elements are also to be mentioned other racial intermixtures which the Jews acquired during their diaspora for the last two thousand years.

⁴ Loc. cit.

We will discuss it in detail in a later paper, after discussing the other physical traits of the modern Jews. It is enough for the present to show that there are some reasonable grounds for assuming that even the ancient Hebrews were to some extent brachycephalic, that is, not Semitic.¹

There are also recorded twelve skulls from a Jewish cemetery in Basel of the thirteenth and fourteenth centuries. The individual indices are 76.8, 79.6, 81.4, 82.1, 82.8, 85.9, 86.0, 86.2, 86.4, 87.3, 88.2, 94.2. The average *cranial* index is 84.66, i. e., a cephalic index on the living of 86.66, which is even more brachycephalic than that of the modern Jews.² This series of skulls, although more extensive than that of Lombroso, is also insufficient to form a basis for any positive opinion. It is hoped that with the publication of the anthropological researches of the Archeological Expedition to Syria in 1899, by Henry Minor Huxley, which consist of the measurements taken on forty-three Samaritans and on twenty-five skulls from a Samaritan cemetery at Nablus, our knowledge of the head-form of the ancient Hebrews may be greatly augmented and may place us in a position to form definite conclusions.³

Another possible explanation of the broad-headedness of the modern Jews is that the original stock may have been of a dolichocephalic type similar to other Semites, but after their dispersion the Jews crossed with other races of round-headed types. As a result of a process of natural selection, the brachycephalic type has survived, while the dolichocephalic Semitic type has

¹ Dr Otto Ammon, speaking of the homogeneous head-type of the Jews in Baden, says that there can be no doubt that the Jews are a mixed race. But he adds that *the intermixture of foreign elements were mainly introduced a very long time since* (the italics are Ammon's). If the intermixture were recent, it would be impossible to obtain a curve with such a slender appearance. The height of the curve also confirms this opinion.—*Zur Anthropologie der Badener*, Jena, 1899, pp. 650-651.

² J. Kollmann, "Schädel und Skeletreste aus einem Judenfriedhof des 13 u. 14 Jahrhundert zu Basel," *Verhandl. der Naturforschenden Gesellschaft*, Basel, VIII, pp. 115-126.

³ See the Preliminary Report of the Archeological Expedition, in the *American Anthropologist*, Jan.-Mar., 1902.

succumbed in the struggle for existence. This hypothesis would account for the Jews of eastern Europe, the great majority of whom are known to have entered Europe by an eastern route, thus having an opportunity to cross with the round-headed inhabitants of Asia Minor, particularly Caucasia. But the Jews of southern and western Europe cannot be said to have intermixed with markedly brachycephalic races. The majority are known to have entered by a western route, intermingling mostly with dolichocephalic races along the shores of the Mediterranean. These Jews are known as "Sephardim," and are mostly the descendants of the Jews expelled from Spain and Portugal during the dark Middle Ages. Measurements taken on them by Joseph Jacobs, C. Lombroso, Leopold Glück, and R. Livi¹ show that they are also brachycephalic, the cephalic index being above 80, and even above 82 of Lombroso's series of 112 Italian Jews, as we have seen above. How can we account for the round-headedness of the Sephardim?

We have failed to find recorded in anthropological literature of today any measurements of the Sephardim inhabiting Tunis, Morocco, and other parts of Africa, or of the Jews in Syria—the Yemenites and others; we are consequently not in a position to determine whether these Sephardim are also brachycephalic. From the measurements of Oriental Jews which we have succeeded in obtaining (these are not included in the figures presented in this paper, but they will be published in due time), we find them to be distinctively dolichocephalic. Ripley² argues that the only modern Jews who approach the Semitic type of head are those actually residing in Africa, and that upward of 90 percent of the nation have widely departed from the parental type in Palestine. But we must mention in this connection that

¹ J. Jacobs and I. Spielman, "On the Comparative Anthropometry of English Jews," *Journ. Anthropol. Inst.*, xv, pp. 76-88; Lombroso, loc. cit.; L. Glück, "Beiträge zur physischen Anthropologie der Spanjolen," *Wiss. Mitt. aus Bosnien und der Herzegovina*, iv, pp. 587-592; R. Livi, *Antropometria militare*, pt. 1, Roma, 1896.

² *Races of Europe*, p. 390.

the African origin of the ancient Hebrews, and even of the Semites generally, is not an established fact. There are good reasons for believing that the majority of the ancient Hebrews were of Asiatic origin, and consequently were brachycephalic, as has been asserted by Luschan and others, above cited. It may therefore be argued that it is the African Jews who diverged widely from the parental type. Ripley quotes Chantre to the effect that many of the living Syrians of Semitic speech are as brachycephalic as the Armenians. It must also be recalled that the Semitic race has only a linguistic foundation. The somatological traits of the ancient Semites are thus far unknown to us.

Some inhabitants of Asia Minor, particularly of the mountainous region of the Caucasus, are considered by all authorities to be of Semitic origin. Pantukhof¹ considers the Armenians, the Lesghians, and, to some extent, the Georgians and Greeks to be of Semitic derivation. Their brachycephaly (cephalic index 85-87) is one of the reasons for ascribing them to the Semites according to Pantukhof. More recently Kurdoff² has suggested that the Lesghians of Daghestan are closely related to the Jews and their brachycephaly was derived from their intermixture with the latter. Uslar has shown that the Jews in the Caucasus are not recent arrivals, but have been there from time immemorial, and he adduces good linguistic evidence to support his view that the cradle of the Semites was southern Armenia.³

Travelers who have visited Caucasia almost invariably comment on the close similarity to the "Jewish" facial expression of many aboriginal inhabitants. Many portraits of Armenians, Greeks, Aisors, Ossets, etc., are often mistaken for Jewish. All this tends to show that the Asiatic origin of the modern Jews is supported by substantial evidence, and their brachycephaly may thus be explained.

¹ Loc. cit., and also *Les races du Caucase* (in Russian), Tiflis, 1900.

² "Anthropology of the Lesghians," *Russian Anthropol. Journ.*, 1901, No. 3-4, pp. 165-176.

³ Quoted from Pantukhof, *Observ. Antropol. au Caucase*, pp. 53-55.

It will be noted that the problem becomes more complicated the more thoroughly we attempt to analyze it. The only way in which we may be able to get more light on the question is by a study of the other tests we have for the identity of races, namely, pigmentation, stature, the form of the face, and expression; and by a study of the association and correlation of these various traits we may be in a position to eliminate the elements which disturb the unity of the racial type and discern more clearly the elements which make up the contemporaneous Jews.

We will therefore speak of pigmentation in our next study.

NOTE.—The difficulty of reaching people who will submit to anthropometric measurements is well known to every one who has attempted to study physical anthropology on the living. I am therefore greatly indebted to Lee K. Frankel, Ph.D., Manager of the United Hebrew Charities of New York, for affording me the opportunity of obtaining anthropometric measurements in connection with my work as medical examiner for the Charities. Without Dr Frankel's assistance this work could not have been done. Dr D. Blaustein, of the Educational Alliance, has also greatly contributed to the work by granting permission to measure the Jewish young men who attend the gymnasium in the institution under his care. The interest in the work and the courtesy extended by Mr Joseph Jacobs I also mention with appreciation.



1.—MODERN OUTRIGGER CANOE OF GUAM



2.—GUAM FISHERMAN WITH CAST-NET OF PINEAPPLE FIBER

GUAM AND ITS PEOPLE

By W. E. SAFFORD

The Marianne islands, or Ladrões, form a chain about four hundred miles long in a north-and-south direction and lying about four days' run by steamer to the eastward of the Philippines. More definitely speaking, they extend from $13^{\circ} 14'$ to $20^{\circ} 30'$ north latitude and lie between $143^{\circ} 31'$ and $143^{\circ} 46'$ east longitude. They are of volcanic origin and are surrounded by coral reefs. In the northern islands there are a number of volcanoes in full activity, but in the south volcanic action had ceased long before their discovery.

Guam, the largest and most important member of the group, is the only island belonging to the United States, the remainder having been sold by Spain to Germany after the close of the late war. It is at the extreme south of the chain and at present has a population of 9676.¹ The island is of irregular shape and is about 29 miles long from N. N. E. to S. S. W. At its narrowest part, near the middle, it is less than 4 miles across; near the ends the breadth is from 7 to 9 miles.

The northern portion of the island consists of a mesa, or plateau, an ancient coral reef, elevated about 150 feet above the sea-level, with one or two peaks of no great height extending through it. It is without streams or springs, owing to the porous nature of the coral, except in the immediate vicinity of the peaks referred to, where in the wet season there is for a time a supply of water. Near the middle of the island, in the immediate vicinity

¹ This number refers to the actual residents of the island and does not include visitors nor the United States forces stationed there. The figures are taken from the census of 1901, and were kindly communicated to me by Don Pedro Duarte, late Captain in the Spanish army, now a resident of the island.

of Agaña, the capital, there is a large spring from which a copious supply of water issues. This, after slowly oozing through an extensive swamp,—an ancient lagoon,—finds its way into the sea by means of a river, the channel of which has been artificially lengthened and turned for a mile parallel to the coast, for the convenience of the natives. The southern portion of the island is principally of volcanic formation. Few of the peaks exceed a thousand feet in height. It contains a number of streams, some of which lose themselves beneath the surface for a time and reappear issuing from caverns. As in most calcareous formations, funnel-shaped sink-holes are of frequent occurrence, the water draining into them sometimes reappearing near the beach in the form of springs, or spurting forth in places from beneath the sea.

Soil.—Near the junction of the volcanic and coral formations the limestone presents a crystalline structure, pure crystals of carbonate of lime being frequently found; and nodules of flint similar to those from European chalk formations are met in certain localities. The soil of the greater part of the island is thin and red. It owes its color to the oxide of iron present in the disintegrated coral of which it is principally composed. In the valleys and forests there is an accumulation of vegetable mold, and in swampy places the soil is black, rich, and suitable for the cultivation of rice.

Climate.—Guam is situated on the dividing line between the northeast trade-winds and the area of the monsoons of the China sea. From December to June the prevailing winds are from the northeast, the temperature is agreeable, the nights cool, and the air is refreshed by occasional showers. The most agreeable months are March, April, May, and June. During July and August southwest winds are frequent and are accompanied by heavy rain-squalls. Hurricanes may occur at almost any time of the year. They may be expected at the changes of the monsoons and are most frequent in the months of October and

November. They are often of such violence as to blow down the greater part of the native houses, laying waste the maize and rice fields, uprooting or breaking off coconut trees, destroying the bread-fruit crop, tearing to shreds plantains and banana plants, and killing fowls and cattle. Vessels at anchor in the harbor are frequently swept from their moorings and cast upon the reef, as the letter-books of the Spanish governors of the island will show. Hurricanes are usually followed by scarcity of food. The natives, who very seldom have a reserve on hand, are obliged at such times to go to the forest for wild yams and nuts of *Cycas circinalis*.

Earthquakes are also frequent, but are not often violent. One of the most severe the island has known in historical times was that of 1849, which destroyed the church and the Government house in the village of Umata. Not long afterward a number of natives of the Caroline islands appeared at Guam, stating that their islands had been swept by enormous waves, and begging the governor for an asylum. The most recent occurred September 22, 1902, causing serious injury to the building used as the marine barracks, and killing several natives.

Vegetation.—The flora of Guam, though possessing a number of species not known from other localities, bears a general resemblance to that of many other volcanic, coral-fringed islands of the Pacific. In the forests are wild bread-fruit trees (*Artocarpus*) of great size; giant banyans and other species of *Ficus*; Leguminosæ with hard, mahogany-like wood; arboreal Apocynaceæ, Verbenaceæ, Hernandiaceæ, and Malvaceæ; several species of *Pandanus*; and a wealth of ferns growing on the ground, climbing tree-trunks, or perched upon the branches like great birds-nests. In rocky places grow an interesting rubiaceous shrub or small tree, *Bikkia mariannensis*, with four-parted, funnel-shaped flowers; the ramie plant, *Boehmeria nivea*, var. *tenacissima*, growing in its wild state as a branching shrub or small tree, and *Cycas circinalis*, which resembles a tree-fern with its glossy, plume-like fronds.

In the sabanas, or places devoid of forest growth, occur vast stretches of a coarse grass called *neti*, patches of brake-like *Gleichenia*, and scattered ironwood trees (*Casuarina equisetifolia*). The ironwood grows also along the sandy beaches, especially on the east coast of the island, where the trees present a twisted and battered appearance from the constant trade-winds and the effects of the frequent hurricanes. Other shore trees are the widely spread *Hibiscus tiliaceus*, *Thespesia populnea*, *Terminalia catappa*, *Heritiera littoralis*, and *Barringtonia speciosa*. In the rich valleys the betel-palm, *Areca catechu*, is plentiful; and near the banks of streams grow a tree-fern (*Alsophila*) and the giant *Angiopteris evecta*. Twining in the thickets are several species of *Convolvulaceæ*, *Leguminosæ*, wild yams (*Dioscorea aculeata*) with sharp, wiry, branching thorns, and a peculiar leafless, wiry parasite, *Cassytha filiformis*, belonging to the *Lauracæ*. In the swamps are dense growths of reeds and marsh-ferns (*Chrysodium aureum*) among which twines the delicate little *Lygodium scandens*. The vegetation along the beach is like that of most tropical shores, made up of goats-foot, convolvulus (*Ipomoea biloba*), sea-beans (*Canavalia obtusifolia*), and the shrubby *Scaevola kernigii* and *Tournefortia argentea*. On the rocky islets, besides the *Cycas* and *Bilckia* mentioned above, grow a fine hardwood tree (*Ochrocarpus obovalis*), called *chopag* by the natives, and the widely spread *Xylocarpus granatus*. In the mangrove swamps are tangled growths of *Rhizophora mucronata*, *Bruguiera gymnorhiza*, and crimson-flowered *Lumnitzera*.

It may be of interest to those unfamiliar with Pacific insular floras to note the absence of pines, cedars, willows, walnuts, birches, *Ranunculaceæ*, *Rosaceæ*, *Caprifoliaceæ*, and *Cactaceæ*: there are few *Compositæ* and but one or two crucifers. It is probable that none of the palms are indigenous, with perhaps the exception of a wild rattan (*Calamus*) of no economic value. Among plants conspicuous for their absence are the Polynesian chestnut (*Inocarpus edulis*), the paper mulberry (*Broussonetia*



1.—TANNING AN OX-HIDE IN GUAM



2.—DRYING MAIZE IN THE STREETS OF AGANA, GUAM



papyrifera), and the candle-nut (*Aleurites moluccana*), all of which are common on most islands of Polynesia.

Fauna.—Besides rats and mice the only mammals are a large fruit-eating bat, or flying-fox (*Pteropus*); a small insectivorous bat which during the day-time remains in caves; wild hogs; and a species of deer introduced into the island by Don Mariano Tobias, who was governor from 1771 to 1774. The deer are now so abundant as to cause serious damage to the corn-crops and young coconuts. Goats are also to be found on several of the outlying islets. Cattle and carabaos, or water-buffalo, have been introduced and are used both for food and as beasts of burden.

Among the birds are several species of fruit-doves, a pretty little fan-tailed fly-catcher, scarlet-and-black honey-eaters with long, slender curved beaks, black starlings, a crow, a tawny-and-blue kingfisher (*Halcyon*) which preys on lizards and insects instead of fish, the swift that makes edible nests, a little fly-catcher named for De Freycinet (*Myiagra freycineti*), a small *Zosterops* with olive-green and yellow plumage, two rails (*Hypotaenidia* and *Poliolimnas*) and a gallinule (*Gallinula chloropus*) which frequent the swamps and taro-patches; and along the shores a heron, a bittern, two curlews, the Pacific godwit, several sandpipers, plover, the wandering tattler, sanderling, snipe, and turn-stones. The only bird of prey known to occur is the widely spread short-eared owl (*Asio accipitrinus*), called *momo* by the natives. The most beautiful of the birds are the fruit-doves, one of which (*Ptilinopus roseicapillus*) belongs to a group widely spread in the Pacific, having rosy crowns, green backs, and yellow, purple, and orange plumage on the under surface. *Acrocephalus luscini*a is a reed-warbler, a modest bird bearing a general resemblance to our catbird and having an exquisite song.

Among introduced species are the beautiful little Chinese partridge (*Excalfactoria sinensis*), brought to the island in recent years by Don Pedro Duarte, and *Turtur dussumieri*, the Philippine turtle-dove. *Phlegoenas xanthonura* is a fruit-eating dove,

interesting from the great dissimilarity between the adult male and the female. The former, called *apaka* by the natives, is considerably the larger and has a white head. The latter, called *paloman kunau*, is of an almost uniform chocolate color. The natives think them to be different birds which live together.

The best game bird is a wild duck, *Anas oustaleti*, a species peculiar to the island but closely allied to *Anas superciliosus* which occurs in Samoa. Curlew, gallinules, plover, and doves are also hunted by the natives for food.¹

Among the reptiles are a large lizard (*Varannus*) which robs birds-nests and eats young chickens and pigeons, a blue-tailed skink, one or two geckos which frequent the houses of the natives and run about the ceilings and walls catching insects, and a small snake (*Typhiops*) belonging to the Epanodonta, very much in general appearance like an earth worm, but with a hard glossy skin.

Several species of land-crabs occur, including the curious *Birgus latro*, or "robber-crab," kept by the natives in captivity and fattened on coconuts for the table. In the streams there are shrimps and on the shores spiny lobsters; both of these are highly esteemed for food. A full list of the fishes and birds is given in the report of the Director of the Bernice Pauahi Bishop Museum of Hawaii for 1900, the result of the work of Mr Alvin Seale, who collected on the island in 1900.

Discovery.—The island of Guam was discovered by Magellan on March 6, 1521, after a passage of three months and twenty days from the strait which bears his name. Among the accounts written of his expedition, that of Antonio Pigafetta, of Vicenza, who accompanied him, is full of valuable and interesting details. Pigafetta tells of the terrible suffering of his companions on their way across the waters of the unexplored ocean: how their food failed, until they had only crumbling biscuit full of

¹ See "Birds of the Marianne Islands and their Vernacular Names," *The Oxyre*, March-April, 1902.



VIEW NEAR PITI, GUAM, SHOWING FRAMEWORK OF HUT LASHED TOGETHER WITH PANDANUS LEAVES

maggots to eat, all foul from the excrement of rats; how they were forced to eat the rats themselves, which brought a price of half-a-crown each, and moreover "enough of them could not be got"; how they even resorted to sawdust of wood, and the ox-hides used as chafing gear in the rigging under the main yard, all stiffened and hardened by sun, rain, and wind, soaking them for several days in the sea, and then putting them "a little on the embers." The water they had to drink was yellow and stinking, and the gums of nearly all were swollen with scurvy, and nineteen died, and twenty-five or thirty others fell ill "of divers sicknesses, both in the arms and legs and other places, in such manner that very few remained healthy."

Two islands were sighted, but only birds and trees were found upon them and no supplies could be obtained. These they called the *Unfortunate islands*. Finally three other islands were sighted, covered with rich vegetation and inhabited by many people, who came out to meet them in wonderful canoes, which seemed to fairly fly over the water. The sails were triangular-shaped mats woven of pandanus-leaves and were supported on a yard after the manner of lateen sails. The mast was amidships. Instead of going about in tacking they simply shifted the sheet of the sail from one end of the canoe to the other, so that which had been the bow became the stern, and the stern became the bow. Parallel to the fore-and-aft line there was an outrigger or log, rigidly connected with the hull by cross-pieces and resting upon the surface of the water. This served, both by its weight and buoyancy, to keep the narrow craft from capsizing, and was kept always on the windward side by shifting the sheet as described above. All of the boats were painted, some black and others red. They had paddles of the form of hearth shovels, which could be used for steering or propelling the boats.¹

¹ "Hanno il timone simile ad una pala da fornajo, cioè una perlica con una tavola in cima; e doppio essendo questo timone o remo, fanno a piacer loro di poppa prora."
—Pigaletta, *Primo Viaggio intorno al Globo Terroqueo*, Milano, MDCCC, p. 53.

The ships came to anchor near a village on the southernmost island, and the natives brought them refreshment of fruits. The sails were furled and preparations were made to land, when it was discovered that the skiff which rode astern of the flag-ship was missing. Suspecting that the natives had stolen it, the Captain General went ashore with forty armed men, burned forty or fifty houses and many boats, and killed seven or eight native men and women. He then returned to the ship with his skiff and immediately set sail, continuing his course to the westward.

"Before we went ashore," says Pigafetta, "some of our people who were sick said to us that if we should kill any of them, whether man or woman, that we should bring on board their entrails, being persuaded that with the latter they would be cured.

"When we wounded some of those islanders with arrows, which entered their bodies, they tried to draw forth the arrow now in one way and now in another, in the meantime regarding it with great astonishment, and thus did they who were wounded in the breast, and they died of it, which did not fail to cause us compassion.

"Seeing us taking our departure then, they followed us with more than a hundred boats, for more than a league. They approached our ships, showing us fish and pretending to wish to give them to us; but when they were near they cast stones at us and fled. We passed under full sail among their boats, which with greatest dexterity escaped us. We saw among them some women who were weeping and tearing their hair, surely for their husbands killed by us."

Aboriginal Inhabitants.—The natives were described by the early navigators and missionaries as people of the stature of Europeans. They were lighter in color than the Filipinos, and the women and children were fairer than the men. At the time of the discovery the men wore their hair loose or coiled in a knot on top of the head. Later they are described as shaving the



1.—THE VILLAGE OF ASAN, GUAM, SHOWING TYPICAL HOUSES, AND COW HARNESSSED TO VEHICLE



2.—LANDING PLACE AT PITJ; COCONUT TREES NOTCHED FOR GATHERING TUBA



head, with the exception of a crest about a finger long, which they left on the crown. Some of them were bearded. Pigafetta says that they were well formed, and in the report of the early missionaries they were said to be more corpulent and robust than Europeans, but with a tendency to obesity. They were remarkably free from disease and physical defects, and lived to a great age. Among those baptized the first year by the missionaries there were more than one hundred and twenty said to be past the age of a hundred years. Their hair was naturally jet black, and in early times was worn so long by the women as to touch the ground. The men wore no clothing, and the only covering of the women was a small apron-like garment made of the inner bark of a tree. The women were handsome, and more delicate in figure than the men. They did not work in the fields, but occupied themselves in weaving baskets, mats, and hats of Pandanus leaves, and doing other necessary work about the house.¹

In their general appearance, language, and customs the people of Guam bore a resemblance to the Tagalos and Visayans of the Philippine islands. The vocabulary, however, was distinct, with the exception of a few words of Malayan affinity widely spread over the Pacific (such, for instance, as the names for sky, fowl, fire, and a few others). Their grammatical forms were very different from those of the Polynesians, tenses being expressed by the reduplication of syllables and the insertion and prefixing of particles to the root of the verb.

Before marriage it was customary for young men to live in concubinage with girls, whom they purchased from their parents by presents. This did not injure a girl's prospect for marriage afterward. Frequently a number of young men and young girls

¹ Le donne son belle, di figura svelta, piu delicate e bianche degli uomini, con capegli nerissimi sciolti e lunghi fino a terra. Vanno pur esse ignude, se non che coprono le parti vergognose con una corteccia stretta e sottile quanto la carta, tratta dalla scorza interna che sta fra la corteccia il legno della palma. Esse non lavorano alla campagna, ma stanno in casa tessendo stuoie, ceste di palma, e altri simili lavori facendo necessarj alla famiglia.—Pigafetta, p. 51.

would live together in a large public house. After marriage a husband contented himself with one wife, and a wife with one husband at a time. Divorces were frequent, the children and household property always going with the wife. The most frequent cause of divorce was jealousy. If a woman discovered her husband to be unfaithful, she called together the other women of her village, who armed themselves with spears and proceeded to the house of the offender. They would then destroy any growing crops he might own and menace him with the spears until he was forced to flee from the house. Then they took possession of everything they could find and sometimes even destroyed the house itself. When a wife was unfaithful, the husband had a right to chastise her paramour, but she went free from punishment.

Caste distinctions were recognized and very strictly observed. The chiefs, called *chamorris*, owned vast plantations and coconut groves, which were handed down generation after generation to the heirs. A chief's rightful successor was his brother or his nephew, who, on coming into possession of the family estate, changed his name to that of the chief ancestor of the family.

The people were naturally superstitious. They venerated the bones of their ancestors, keeping the skulls in their houses in small baskets, and practising certain incantations before them when it was desired to attain certain objects. The spirits of the dead were called *aniti*, and were supposed to dwell in the forests, often visiting the villages, causing bad dreams and having especial sway over the fisheries. People dying a violent death went to a place called *Zasarraguan*, or the house of Chayfi, where they suffered torture from fire and incessant blows. Those dying natural death went to a subterranean paradise where there were groves of coconuts, plantations of bananas, sugar-cane, and other fruits in abundance. Certain men called *makahna* resembled the *kahunas* of the Hawaiians. They were supposed to have power over the health of the natives, could cause rain, and bring luck to the

fishermen. As among many Indian, Malayan, and Polynesian peoples, they were very careful not to spit near the house of another, undoubtedly through fear of sorcery, should an enemy possess himself of the spittle.

Violent grief was shown on the death of a friend or relative, the people wailing and singing dirges expressive of their sorrow and despair, and recounting the noble qualities of the dead. In the case of a *chamorro's* death the wailing was prolonged for several days. Small mounds were raised over the grave and were decorated with flowers, palm-leaves, canoe-paddles if the deceased was a fisherman, and spears if he was a warrior. The body was sometimes anointed with fragrant oil and taken in procession from house to house, as though to allow the spirit an opportunity of choosing an abiding place among the homes of its kindred.

On occasions of festivity the men and the women would collect in groups each by themselves, and, forming semicircles, sing and chant their legends and fables. Sometimes these songs would be in three-part harmony, "treble, contralto, and falsetto." The songs were accompanied by appropriate gestures and movements of the body, the women using certain rattles and castanets made of shells. On these occasions the women adorned their foreheads with wreaths of flowers like jasmines, and wore belts of shells and bands from which hung disks of turtle-shell, which were much prized among them. They wore skirts of fringe-like roots, which the early missionaries declared were "rather like cages than garments."

Though called *Ladrones* ("Thieves"), they were so honest that their houses were left open and without protection, and very seldom was anything found missing. They were very hospitable and kind, as all the early accounts testify. It was not until they were given just cause that their attitude toward the Spanish changed, whereupon the latter declared that they had been mistaken in attributing virtues to them.

They declared that the foreigners brought to the island rats,

flies, mosquitoes, and strange diseases. They lived with little restraint, matters of importance to the villages or to the general public being decided by assemblies of their chiefs and old men; but these had little authority, and a native did pretty much what he pleased unless prevented from doing so by some one stronger than himself.

Their arms were wooden spears pointed with bones, and slings with which they threw oval-shaped stones with remarkable force and accuracy, "as far," says one observer, "as an arquebus can shoot." From their earliest youth they were accustomed to practise with these weapons and often had contests of spear-throwing, fencing, and throwing at marks. Often the stone was hurled with such swiftness that it would become embedded in the trunk of a tree. The women went to sea with their husbands for sport. They were fine swimmers, and as they threw themselves into the water and came bounding from wave to wave, they reminded Pigafetta of dolphins.

Their houses were well made, thatched with palm-leaves, and raised on wooden posts or on pillars of stone.¹ They were divided into several rooms by partitions of mats. Their beds were mats woven from Pandanus leaves divided into strips of great fineness. Their boats were kept under shelter, large sheds being constructed for them near the sea, the stone or masonry pillars of which may still be seen. These stone pillars are held in awe by the present natives of the island, who think it unlucky to disturb them or even to linger near them.

Food.—The food of the aborigines consisted of fish, fowls, rice, bread-fruit, taro, yams, and bananas (Pigafetta calls them "figs a palm long"), coconuts, and nuts of *Cycas circinalis*, the poisonous properties of which they removed by soaking and repeatedly changing the water, after which they were cooked. For relishes they ate certain seaweeds, the nuts of *Terminalia*

¹ "Fundados sobre fuertes pilares de piedra."—Narrative of Gaspar and Grijalva, who visited Guam with Legaspi in 1565.

catappa and a species of *Pandanus*. *Pandanus* drupes, which are an important food-staple in some Pacific islands, were not a part of their domestic economy; and, although they had pigs at an early date, it is probable that these were introduced after the discovery, as some of the early navigators declare that the natives could not be induced to eat flesh. The creamy juice expressed from the meat of ripe coconuts entered into the composition of several of their dishes. They were ignorant of the manufacture of *tuba* from the sap of the coconut, and had no intoxicating beverages before the arrival of the Spaniards. As was nearly the universal custom throughout the tropical Pacific, they cooked by means of stones which they heated in a hole in the ground, making alternate layers of food, leaves, and heated stones, somewhat after the manner of a New England clam-bake.

Narcotics.—The kava-pepper (*Piper methysticum*) was unknown to them; but its place may be said to have been taken by the betel (*Piper betle*), the leaves of which they chewed wrapped around a fragment of the nut of *Areca catechu*, with the addition of a pinch of lime. This habit is still universal among the natives of Guam. The betel, thus prepared, has an agreeable aromatic pungency, not unlike that of nutmeg. It imparts a fragrance to the breath, which is not disagreeable, but it discolors the teeth and causes them to crumble away, while the constant expectoration of saliva, red as blood, is a disagreeable habit.

Cultivated Plants.—The principal plants cultivated by the natives before the discovery were the bread-fruit—a sterile form of *Artocarpus communis*, which is propagated by cuttings, or sprouts, from the roots; the *dugdug*, or fertile form of the same species, which also grew wild upon the island, yielding an edible, chestnut-like seed, logs from which they made their largest canoes, bark for their aprons or loin-cloths, and gum which served as a medium for mixing their paints and as a resin for paying the seams of their canoes; the betel palm (*Areca catechu*) and the betel pepper (*Piper betle*), which were undoubtedly brought to the island

in prehistoric times, as also were rice, sugar-cane, and the species of *Pandanus* called *aggak*, from the leaves of which they made their mats, baskets, hats, and boat-sails. Of this plant only one sex occurs on the island, and it must consequently be propagated by cuttings. Coconuts were also, in all probability, brought hither, as were several varieties of yams (*Dioscorea*), separated by them into two groups which, according to the shape of the leaf, they call *nika* and *dago*. A third species, *Dioscorea aculeata*, called *gado*, which now grows wild in thickets, is characterized by sharp, wiry, branching thorns near the ground, which serve to protect its starchy tubers from wild hogs. Several varieties of taro were cultivated, both in swampy places and on dry hill-sides. Varieties of *Colocasia antiquorum* were called *sun*; those of *Alocasia indica* and allied forms were called *piga*. Among the less important plants were the Polynesian arrowroot (*Tacca pinnatifida*), called *gabgab*; turmeric (*Curcuma longa*), called *mañgo*; wild ginger (*Zingiber zerumbet*), or *asñgod halom-tano*; and a species of red-pepper (*Capsicum annuum*), called *doni*. There were no edible oranges, mangoes, mangosteens, nor loquats. A fruit much relished by the fruit-eating pigeons was the *piod* (*Ximenia americana*), which resembles a small yellow plum with a slight flavor of bitter-almond.

Agricultural and other Useful Arts.—For growing taro little art is required. Yams require more care; while bananas, bread-fruit, and the textile *Pandanus*, propagated by cuttings or sprouts, have to be severed from the parent stock, stuck into the ground, and occasionally watered. For the cultivation of rice—the only cereal of the aborigines—far greater skill is required, on account of the necessary preparation of the fields and the construction of irrigating ditches. Rice was the principal staple furnished to vessels in considerable quantity. Oliver van Noort, who visited the island in 1600, mentions it in his narrative; and the Nassau fleet in 1625 bought it in bales containing 70 to 80 pounds each. At this time it was cultivated in many places on the island, which

indicates no little industry and enterprise on the part of the natives. I dwell on this point, because the aborigines of Guam have been described as very indolent and of the lowest order of civilization, ignorant even of the art of making fire. Surely the people who constructed such marvelous "flying praos," who dwelt in commodious and well-built houses, and who carried on the art of agriculture to the extent indicated by the narratives of the early expeditions of the Dutch, cannot be classified as abject savages, even though their bodies were covered by very scant clothing. If encounters took place between them and the crews of visiting ships,—and these crews, fresh from pillaging the coast of South America and accustomed to deeds of violence and murder, were in all probability far from gentle in their treatment of the natives,—they were designated as miserable infidels, to "slay" whom was a legitimate pastime; while, if a European was killed by one of them, without investigating the cause, he was declared to have been murdered, and his death was avenged by the burning of villages, boats, and boat-houses, and by killing men, women, and children.¹ They were branded with the name "Ladrones" for stealing a boat and some bits of iron; yet the Spaniards did not hesitate to steal human beings to serve as slaves at their pumps.²

Arrival of Jesuit Missionaries.—For nearly a century and a half after the discovery, no attempt was made to colonize the island. Spanish galleons, on their annual trips from New Spain to the Philippines, stopped regularly at Guam for fresh water and provisions. On one of these a Jesuit priest, Padre Diego Luis de Sanvitores, was passenger. His heart was moved with pity for the natives living in spiritual darkness in this earthly paradise, and when he reached Manila he begged that he might be sent to them as a missionary. His request was refused, and it was not until he succeeded in getting a direct order from the king, Philip

¹ See narrative of the expedition under Miguel Lopez Legaspi, which visited Guam in 1565.

² Burney, *Narrative of the Loaysa Expedition*, 1526, vol. 1, p. 217.

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IV, that his wish was realized. A ship was built at Cavite, and Padre Diego was sent, together with several companions, to carry the faith to the Ladrones.

He arrived at Agaña on March 3, 1668, the ship having first proceeded to Acapulco, Mexico, as was the custom, owing to the head winds and the currents. Sanvitores was full of zeal and worked with phenomenal success among the natives. They received him with great kindness, giving him a dwelling-place and building for him a church at Agaña. Letters written by him to his superiors are full of interesting information concerning the natives. He tells of their great regard for caste distinctions, their veneration for the bones of their dead, their practice of sorcery, and he regrets their love of worldly pleasures, their disinclination for serious occupations, and complains that their history is "obscured by a thousand fables."

After a time trouble arose between the missionaries and the natives. At first the chiefs insisted that the benefits of baptism should not be extended to the common people; then they began to doubt its efficiency, and many who had been baptized reverted to their former beliefs and practices. They resented the efforts of the missionaries to change their marriage customs, the destruction of the sacred bones of their fathers, and the forcible detention of children whom the missionaries had taken to educate. Finally, after four years of unceasing labor among them, Padre Sanvitores was killed while baptizing a child against the will of its father.

Active measures were now taken to reduce the natives. The queen of Spain, Maria Ana of Austria, widow of Philip IV, became interested in their conversion and founded a college for the education of native youth, which she endowed with an annual income of three thousand pesos. In honor of her the group was named "Las Islas Marianas." The income from the fund bestowed by the queen continued until the seizure of the island of Guam by the United States.

The Jesuits continued in the island for a century. At their expulsion, in 1769, in conformity with the edict of Carlos III, their place was taken by Recollet friars of the order of San Agostino. During their stay the Jesuits not only introduced many useful plants and fruits from Mexico and from other countries, but they taught the natives many useful arts and habits of industry, established extensive plantations, and brought to the island cattle, horses, mules, donkeys, goats, and carabaos, or water buffalo. The youths under their care were instructed in the elements of learning and in the Christian doctrine, and were trained to serve as acolytes. They instructed them also in music. The inventory of their effects, taken at the time their property was seized by order of the king, is still in Guam. Among the items are: "seven violins with their bows, three sweet flutes, two harps, and one viol." The inventory also includes a list of blacksmith's tools, axes, planes, chisels, saws, and appliances for tanning leather, together with a good supply of agricultural implements; and the list of live-stock and articles found on their farms showed that the latter were in a flourishing condition.

Plants Introduced by the Missionaries.—The principal plants introduced by the missionaries were maize or Indian corn, tobacco, oranges, lemons, limes, pineapples, cashew-nuts, or *marañones*, peanuts, egg-plants, tomatoes, and several species of *Anona*, besides a number of leguminous vegetables and garden-herbs.

With maize, the chief article of cultivation, came the Mexican *metatl* and *mano* for making tortillas. Tobacco leaves were used for paying the natives for their work. Most of the sweet potatoes grown were sold to ships, the natives contenting themselves with yams and taro or bread-fruit. Among the medicinal plants brought from Mexico was *Cassia alata*, which is still called "*acapuleo*"; and *Pithecolobium dulce*, called *kamachilis*, was brought for the sake of its bark, which is used in tanning.

Modern Agriculture.—Maize is cultivated in patches varying

from one acre to ten acres. It is planted on the highlands at the beginning of the rainy season. A second crop is obtained from the lowlands in the dry season. It must be shelled as soon as gathered, carefully dried to prevent molding, and stored in large earthen jars (brought from Manila, Japan, or China) for protection against weevils. In the lowlands with deep soil, the fields may be plowed. In plowing bullocks or carabaos are used, the latter preferably in wet places; the plow is of wood, with a single handle, and tipped with iron, usually forged by the village blacksmith from an old musket barrel.

Rice is cultivated very much as in the Philippines. The crop is frequently a failure owing to drought or a blasting hurricane; and even in good seasons the crop is insufficient for the consumption of the inhabitants. It is one of the food staples of the island, and is now imported from Japan and the United States.

Taro is cultivated both in wet and in dry ground. It is much eaten by the natives, as also are several species of yams (*Dioscorea*). There are at least four varieties of sweet potatoes. It is interesting to note that the vernacular name for sweet potato—*camote*—is of American origin, and is still commonly used among the Spanish-speaking people of our extreme Southwest.

Tobacco is planted by nearly every family. It must be carefully weeded and kept free from insect-larvæ, the most destructive of which is that of a sphinx moth. It is never cured nor allowed to ferment, but is simply hung under shelter and left to dry. The natives prefer their tobacco to all other kinds. They will not smoke foreign tobacco unless their own gives out. It is usually smoked in the form of loosely rolled cigars, made without paste, and wrapped with agave or pineapple fiber.

Several kinds of Leguminosæ are cultivated both for the sake of their green pods and for their ripe seeds. One of the best is *Psophocarpus tetragonolobus*, the pods of which, eaten green and tender, have four longitudinal ruffle-like wings. Peanuts grow

readily, in places lining the road from Agaña to the port. Mandioc and arrowroot (*Maranta arundinacea*) are cultivated, but not on an extensive scale; and turmeric and tacca, though growing wild, are sometimes planted.

The natives have become essentially an agricultural and pastoral people. Some of the changes brought about by Spanish occupancy are shown in the accompanying illustrations (plates XXVII-XXX). Navigation is scarcely practised by them. The wonderful flying praos have been replaced by small canoes, such as that shown in plate XXVII, which is used by the natives only for fishing. There are scarcely more than a dozen native boats in the whole island. For years what traffic was carried on between the islands of the group was by means of large canoes from the Caroline islands.

Another figure shows the manner in which corn is spread out to dry in the streets upon mats of Pandanus leaves. The cast-net shown in the figure of the fisherman is made of thread twisted by hand from pineapple fiber; and the hide in process of tanning has been treated with an infusion of the bark of *Pithecolobium dulce*, which, like the source of the leather itself, is an intrusion from America.

With the exception of a few families living in rancherias, the natives inhabit villages and go to their ranchos, or country places, for the purpose of feeding and watering their stock or for cultivating their fields. The town houses are well constructed; they are raised from the ground on substantial, durable posts, or built of masonry with a basement or "bodega," which is used as a store-room, taking up the ground floor. Some of them are surrounded by balconies enclosed by shutters or by windows with translucent bivalve shells for panes. The roofs are either of thatch or tile, the best thatch being that made of the leaflets of nipa palm. Many of the houses are provided with gardens, in which grow perennial egg-plants, red-peppers, bananas, plantains, various kinds of beans, squashes, and ornamental and useful shrubs and trees,

including lemons, limes, pomegranates, sour-sops, and sugar-apples (*Anona squamosa*). Frequently under the eaves, so as to receive the drippings from the roofs, are planted rows of bright-leaved *Codiaeums*, cut-leaved *Panax* and other *Araliaceæ*, and dark purple *Eranthemums*; and among the fragrant-flowered species are the *mil leguas* (*Pergularia odoratissima*), the Egyptian henna (*Lawsonia alba*),—a great bush covered with flowers which bear a general resemblance to and have the odor of mignonette, —and the Ilang-ilang tree (*Canaga odorata*).

Ranchos may be constructed for the use of one or two persons or for a whole family. Many of them are intended only for temporary occupancy, the adjoining ground being allowed to lie fallow after crops have been raised on it for four or five years in succession. The usual form of a small rancho is that of a shed, with walls of coconut matting or woven reeds and a roof of coconut thatch. Half of the hut is taken up by a split-bamboo platform, raised about two feet from the ground. This is the family bed. Beneath it are penned up each night the youngest broods of chickens with their mothers, to protect them from rats, cats, and lizards. The larger fowls fly to the spreading limbs of a neighboring tree (the site for a rancho is always selected near a suitable roosting-tree), or upon the ridge of the roof, or perhaps on some convenient perch in the hut itself, where there are always four or five setting hens in baskets hung on the posts. Sometimes the whole family remains on the rancho during the week, returning to the town on Saturday evening, when a procession of ox-carts a mile long may always be seen en route to the capital, so that their owners may be ready for early mass the next morning.

There are few masters and few servants in Guam. As a rule the rancho is not too extensive to be cultivated by the family, all of whom, even the little children, lend a hand. Often the owners of neighboring ranchos work together in communal fashion, one day on A's corn, the next on B's, and so on, laugh-

ing, singing, and skylarking at their work, and stopping whenever they feel like it to take a drink of *tuba* from a neighboring coconut tree. Each does his share without constraint, nor will one indulge so freely in *tuba* as to incapacitate himself for work; for experience has taught the necessity of temperance, and every one must do his share if the services are to be reciprocal. By the time the young men have finished their round, the weeds are quite high enough once more in A's corn to require attention again. In the evening they separate, each going to his own rancho to feed his bullock, pigs, and chickens; and after a good supper they lie down for the night on a Pandanus mat spread over the elastic platform of split bamboo.

If wealth consists in the ability to gratify one's wants, the people of Guam may be called rich; and were it not for the frequent occurrence of hurricanes, life on the island would be almost ideal. None of the natives depends for his livelihood on either commerce or a trade. There are men who can make shoes, tan leather, and cut stone for building purposes; but such a thing as a shoemaker, tanner, or mason who supports his family by his trade is unknown. In the midst of building a stone wall, the native who has consented to help do the work will probably say: "Excuse me, Señor, but I must go to my rancho for three or four days; the weeds are getting ahead of my corn." And when one wishes to get some lime, the native to whom he goes for it may say: "After I have finished gathering my coconuts for copra I will get my boys to cut wood and make a kiln. Never fear, Señor, you shall have the lime within six weeks."

The result of this condition of society is, that when a father dies the wife and children are not left destitute, as would be the case if they depended on the results of his handiwork alone. The crops continue to ripen and are gathered in due time by the family; the weeds and worms are kept out of the tobacco; the coffee-bushes bend each year under their weight of berries; and the coconuts, as usual, yield their annual dividend. Indeed, in

most cases the annual income in provisions is amply sufficient to keep the family supplied with its simple clothing, some flour and rice brought by the traders from Japan or America to exchange for copra, and perhaps a few delicacies, a ribbon or two, and a new picture of the patron saint to place in the little alcove of the side room, where the light is always kept burning.

While in Guam I knew of only one person on the island dependent upon charity, and she was an old blind woman without children or near relatives. Even blindness does not make beggars of the natives. On one occasion, while crossing the island to report on the suitability of a certain bay as a landing-place for the proposed telegraph cable, I visited a house in which a man and his wife were both blind. He was engaged in twisting pineapple fiber into thread for cast-nets. The surrounding farm was in a flourishing condition: here a field of corn; there a patch of tobacco; a little farther away a grove of young coconuts, set out evenly in rows; near the house a thicket of coffee-bushes red with berries; about the door betel-nuts drying in the sun; at the edge of the forest a cow, very much like an Alderney, tethered to a tree to keep her out of a neighboring patch of sweet potatoes; and in a newly cleared spot, where the stumps of trees were still standing, I saw a rich growth of taro and some yam vines twining up a circle of poles inclined against a tree.

A fine strapping youth came in to prepare dinner. He was the son of the old people and had been born before they were stricken with the disease which caused their blindness. It was he who planted the garden, who cleared the forest, cared for the cow, the pigs and chickens, and collected the betel-nuts. He climbed a coconut-tree near the house and brought in a bamboo joint full of tuba, delicious as cider just beginning to turn sharp, which, after putting across the top some leaves to strain it, he offered us with the manner of a Spanish caballero. The next day, on my return from the opposite shore of the

island, he saddled the sleek little cow and insisted on my riding her back to the city, he and the little calf running along by my side as the cow trotted over the good roads, and wading through the deep mud, as our way led across marshy places overarched by great bamboos. On all the farms we passed the natives were planting coconuts. There were fields of corn, sweet potatoes, and tobacco. The young tobacco plants, recently transplanted, were each sheltered from the sun by a section of coconut leaf, stuck into the ground at an angle. Everybody seemed contented and all had a pleasant greeting for the stranger. Some of the shy little children brought out by their parents to see us took my hand to kiss it, as is the custom in the island on the occasion of a visit from a dignitary of the church or state, or the head of a family. It seemed to me that I had discovered Arcadia; and when I thought of a letter I had received from a friend asking whether I believed it would be possible to *civilize* the natives, I felt like exclaiming: "God forbid!"

STAR CULT AMONG THE PAWNEE—A PRELIMINARY REPORT

By ALICE C. FLETCHER

The far-reaching avenues of trade upon this continent stretch from the equatorial regions to its northern and southern confines, and along these paths have passed with the traders more than their articles of barter. These men took with them the knowledge of rites, customs, myths, and folktales, which spread, with modifying influence more or less enduring, from tribe to tribe. As a result, no one tribe on the western continent can be said to stand wholly apart from all other tribes, or unaffected as to its forms of organization, its culture, or its folklore. A network of exchange, more or less formal, lies over the whole country, enhancing both the difficulty and the interest of ethnological field research.

Some twenty years ago, while studying among the Omaha and other tribes of the Siouan linguistic group, I met with evidence which seemed to indicate that the people of the Pawnee tribe had probably been instrumental in the spread of certain cults among their neighbors, and that this tribe still possessed in considerable fulness of detail many of their ancient ceremonies. Although at that time the way to witness and investigate these ceremonies was opened to me by some of the old Omaha leaders who were in close and friendly relations with the Pawnee, circumstances beyond my control prevented for several years my entering the Pawnee field. However, I have since been able to take up the work and have made considerable progress, having obtained complete records of ceremonies and attendant rituals.

During the present year I have been joined in this investiga-

tion by Dr George A. Dorsey of the Field Columbian Museum, who agrees with me as to the importance of exploiting this field. We hope to procure as complete a record of this tribe as it is now possible to obtain from the few surviving old men who have been instructed in the rites of their fathers. In this associated work Mr James R. Murie, formerly my collaborator, will continue as our assistant in behalf of his tribe.

The language of the Pawnee belongs to the Caddoan stock. When first met by the white race the people were living near Platte river, in what is now the state of Nebraska. About thirty years ago the tribe was removed from this locality to the place where they now reside in northeastern Oklahoma.

In this preliminary report no mention will be made of the earlier or later migrations of the Pawnee, or of the different divisions of the tribe, beyond the statement that it is now represented by four bands. These bands used always to build their villages in a certain definite geographical relation to each other. The Skidi band was always to the west of the others; it is of the organization and cult of this band that a brief outline will be given.

The Skidi band was divided into several villages, each possessing certain sacred symbolic articles which were preserved in a pack or shrine. Each shrine had its own ceremonies and rituals. The sacred symbolic articles, the ceremonial use of them, and the rituals recited or sung were believed to have been given to the different villages by as many different stars. The star gave its name to the shrine, and the name of the shrine became the name of the village. Where there was a second name it referred to some incident connected with the bestowal of the contents of the shrine, or it was descriptive of the locality where the village was placed.

There were five villages which formed a central group (figure 25). The position of these villages was fixed by the position of the stars which had given them their shrines and ceremonies.

About this central group were located the other villages of the

Skidi band, each in a position corresponding to that occupied by the star of its shrine, so that the villages of the Skidi on the earth were as a reflected picture of their stars in the heavens.

In the central group, the shrine of the village at the west led in the religious rites. Its ceremonies were the first to be performed in the yearly sequence of ceremonies, which commenced when the first thunder in the spring was heard. All but two of the villages took part in these ceremonies, following a certain order.

Not only did the ceremony of the shrine of the village of the west open the rites of the year, but certain of its ritual songs were repeated at the beginning of the ceremonies connected with the shrines of the other villages taking part. To quote the words of my Indian informant, "the ceremonies of the other shrines were like branches of this shrine." This shrine did not have anything to do with secular affairs unless the people were in dire distress.

The ceremonies connected with the shrines of the other four villages of the central group related to the affairs of the tribe, such as hunting, planting and harvesting, the conferring of honors on warriors, and the installation of leaders. The leadership of these shrines rotated in a fixed order. That of the village at the northwest became the leader for the year, that is, a winter and a summer. Then the leadership passed to the village at the southeast, for a winter and a summer. Next came the shrine of the village at the southwest, which led for a year, a winter and a summer, when the leadership fell to the shrine of the village of the northeast, a winter and a summer. After that the leadership returned to the shrine of the village at the northwest, and so on, following the order as given, each shrine being leader every four years.

Quoting again my Indian informant, "The Skidi were organized by the stars; these powers above made them into families and villages, and taught them how to live and how to perform

their ceremonies. The shrines of the four leading villages were given by the four leading stars, and represent those stars which guide and rule the people. The shrine of the village at the west was given by Tiráwa, who is above and over all the stars, hence it is over all the others which were given by the stars. That is why all the ceremonies of the other shrines began with the sacred songs of this shrine. Tiráwa sent this shrine by the star in the west, but it was not to represent that star, but to represent Tiráwa who gave to the mysterious beings, who stand below that star, the power to put life into all things, to set the people in order, and to give them knowledge." He further explained: "First of all was Tiráwa-atius (*a-ti-us*, father), the power above all and over all, the father of all things. Then came the lesser or under powers; these were given places in the heavens; they are in stars. Then all things were made, and men and women were created." Again I quote: "The ceremonies of the shrines give an account of creation, the establishment of the family, and the inauguration of rites by which man would be reminded of his dependence on Tiráwa, of whom he must ask food."

One of the fundamental teachings of these ceremonies is the predication of a duality of the universe. Everything is either male or female; these two principles were necessary to the perpetuation of all things. The east was male, the west was female, the south was male, the north female, the above was male, and the below female. Therefore all the stars in the east were male, and all the stars in the west were female. This quality was imparted to the shrines: that of the west was feminine; so, too, was the shrine of the yellow star at the northwest, which was the first in order of leadership; next in the order was the shrine of the red masculine star in the southeast. The leadership then came to the white feminine star in the southwest, and the following year passed to the shrine of the black masculine star of the northeast. These diagonally situated stars were sometimes spoken of as in "pairs" or "mates."

The care of these shrines was deputed to a woman, the knowledge of its contents, ceremonies, and rituals, to a man.

The sequence of the ceremonies began with those of the star in the west, through which, I was told, "the life-giving power of Tiráwa-atius passed, coming from the west to all living forms." After the ceremony of the star in the west the next in order was the ceremony of the shrine of the village which was leader for the year; the other three villages of this central group sometimes joining, and in that case acting as a unit. The general progress



1 Star of the West.

6 North Star.

2,3,4,5 Four leading Stars.

7 Morning Star.

FIG. 25.—Villages of the Skill band. (The position of four villages is not represented in the diagram.)

was from west to east, and the sequence closed with that of the shrine of the morning star, which included a sacrifice typifying the conjunction of the east and the west, the below and the above, thus insuring the perpetuity and productivity of all forms of life.

The two villages marked 8 and 9 in figure 25 were not included in this sequence, for the reason that their shrines, while connected with stars, were more intimately associated with the animal forms of the earth. They had their special rites, which

included many of the remarkable feats of sleight-of-hand for which the Pawnee have been celebrated.

The influence of star cult was manifest in the construction of the earth-lodge of the Pawnee. The circular floor of this dwelling symbolized the earth, and the dome-shaped roof the arching sky. The four posts which supported the framework of the roof represented the four stars of the leading villages, and on occasions

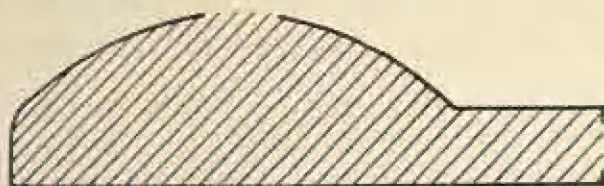


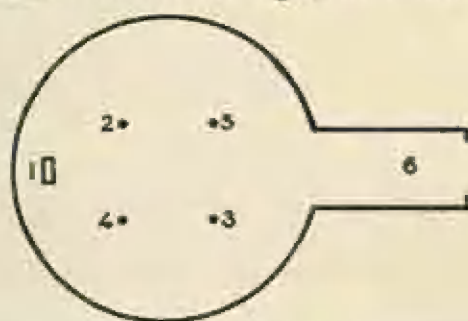
FIG. 26—Section of an earth-lodge.

were painted their respective colors. The place of a shrine was at the west, in accordance with the position of the star of the west (figures 26, 27).

No further mention at this time can be made of the elaborate rites attending the construction of these earth-lodges, nor of their manifold symbolism; nor can other ceremonies relating to stars be spoken of, nor the many ways in which stars were supposed to influence the lives of the people.

As to the identification of the stars which control the position and ceremonies of the villages composing the Skidi band,

with any known constellation, only the north star (to which belong certain ceremonies connected with the chiefs) and the morning star can be pointed out by the Skidi. The central group—the



- 1 Shrine in the West.
- 2, 3, 4, 5. Posts.
- 6 Entrance way.

FIG. 27—Ground plan of earth-lodge.

four leading stars — seem to suggest the four in the body of Ursa Major, but if they ever had any connection with that constellation it appears to be lost. At least that is the conclusion to which present knowledge points; further study may throw light on the identification of this group. The fact that the position of the stars which still exercise so controlling an influence is lost, indicates that we have here traces of an ancient and deeply rooted cult.

MYTHS OF GESTATION AND PARTURITION

By WASHINGTON MATTHEWS

Perhaps when the reader has finished this paper he will place me in the category with the fabled shoemaker who, when the city was in danger and its wise men were considering how best to fortify it, declared, "There is nothing like leather." In something connected with my own special craft, I seek the solution of a difficult problem.

I shall discuss the origin of a myth which is of wide distribution on the American continent and the islands of the Pacific ocean, and has its traces in the eastern world. In this myth, or series of allied myths, the human race is represented as having originated within the earth and as having emerged to its surface through a hole in the ground. The ascent from the lower world is represented as accomplished by means of a tree, vine, or reed, and a deluge is usually associated with the emergence.

Attempts have been made to account for the origin of this myth. The most scholarly of these appears in an essay by the late Horatio Hale entitled "Above and Below." He believed the myth to have arisen from a "disease of language," and to be founded on migration; that in America it refers to a tribe of Indians moving up a river or against the current and that in the South Sea islands it refers to a migration in the direction of the prevailing winds. Hale presents many excellent reasons in support of this theory; but he does not consider the significant fact that there are no myths of descent. Supernatural beings may descend from the sky, but not men; mortals may visit the sky and return from it, but the races of mankind had their origin in the earth and have emerged thence. A migration down a river is more

easy than one in the opposite direction, and, no doubt, many such migrations have occurred. Why, then, have we no myths of descent? In the Pacific islands a migration with the wind is more easy than one against it, and here the theory of migration might easily be held to account for this myth; but not so on the continent of America.

Instead of reserving my conclusion as to the origin of this myth to the end of my essay, I think it will make my argument shorter and clearer if I state it here. The "Story of the Emergence," as I have already named it in a previous work, I believe to be a myth of gestation and of birth. For many years the problem of this myth has shared my thoughts. Long ago I arrived at the solution I now offer, and years of consideration have led me to feel confidence in it rather than doubt.

Among all our Indian tribes, so far as studied, the earth is at least personified as a woman and a mother, and perhaps the ideas of some Indians, in this respect, are more than mere personification. The idea of the maternity of the earth may have been derived from its fruitfulness and the idea of the masculinity of the sun or the sky, from the obvious effect of sunlight or rain upon that fruitfulness; but with some Indian tribes the conception seems to be more precise and material than this—more gross, we might say. "You ask me to plow the ground," said Smohalla, the Umatilla prophet. "Shall I take a knife and tear my mother's bosom? You ask me to dig for stone. Shall I dig under her skin for her bones? You ask me to cut grass and make hay and sell it and be rich like white men. But how dare I cut off my mother's hair?"¹

I desire, in this paper, to be brief. I write not so much in the hope of settling the question I have raised as in the hope of exciting discussion and directing the investigations of younger students. From the myths of various tribes I might bring forward a

¹ "The Ghost Dance Religion," by James Mooney. *Fourteenth Annual Report of the Bureau of Ethnology*, p. 768.

wealth of illustration; indeed, it would not be difficult to write a large volume on the subject; but I shall confine myself to a few quotations which are necessary as a basis for my argument.

In the Navaho language, the earth is called Naëstsán, which means, literally, "Woman Horizontal," or "Woman Lying Down." It is likened to a woman lying supine. The sky, called Yádtilyú, or "Upper Darkness," is said to be her husband. In some of the Navaho-myths the creation of different animals and divine beings is attributed to a visible contact between the earth and the sky, as when clouds hang low on the mountains or cyclones descend. They believe in four subterranean worlds, which may be likened to wombs of the earth, as the people of Zuñi call them; but if thus they speak of more than one lower world it is that they may employ their sacred number four, as they usually do, to the weariness of their civilized hearers.

The place whence men emerged to the surface of this world is, with many tribes, a lake, and a flood of water drives them out or accompanies the exit. These features in the tale must be suggestive to the tocologist.

A tree with some tribes, a vine with the Mandans, a giant reed with the Navahoes, affords means of escape from the lower world to this, and this element in the story is not without its tocolological significance. A singular feature of this part of the tale occurs in the myth of the Mandans of North Dakota. In this, as told to me some thirty years ago, they said that their ancestors escaped from the lower world by means of a vine which was not like the vines we usually see on this earth,—that it twisted from left to right as it ascended. Such is the way in which the funis coils.

In the creation myths of Zuñi,¹ as related by Mr Cushing, the story of the emergence is well elaborated and its physiological character seems easy to trace. The fecundation of the Earth

¹ "Outlines of Zuñi Creation Myths," by Frank Hamilton Cushing. *Thirteenth Annual Report of the Bureau of Ethnology*, pp. 379-383.

Mother by the Sky Father is plainly told. The relations of the four wombs of the Earth to parts of the human anatomy are rudely indicated, and a ladder is described, made of grasses and vines, by which the people are said to have ascended. An allusion is made to a body of water at the place of emergence, but not with the exactness and elaboration which the myths of other tribes give us.

In Cushing's *Zuñi Folk Tales* there is yet another myth of this character, "The Twins of War," which apparently has no connection with the regular creation legend or origin legend of the Zuñi Indians. In this it is told that the twins descended, through a lake, to the under world and found there an unstable and vaporous people who lived not on solid food, but on the vapors and odors of food. They had, in short, "no visible means of support," and were horrified when they saw the Twins of War eating solid substances which the people of the under world had been accustomed to throw away. After various adventures a number of these people were brought to the upper world. Near the end of the story we find the following significant paragraph:

"And for this reason, behold! a new-born child may eat only of wind-stuff, until his cord of viewless sustenance has been severed, and then only by sucking milk or soft food first and with much distress."

There are some interesting points of resemblance between the American mythic Tree of Emergence, as we may call it, and Ygdrasil or the "Tree of Existence" of Norse mythology, as there are between the former and the physiological tree of existence; but I shall present only a few of these. I quote the following from Prof. Rasmus B. Anderson's *Norse Mythology*¹: "Odin himself, in his famous Rune-song in the Elder Edda, says:

¹ *Zuñi Folk Tales*, Recorded and Translated by Frank Hamilton Cushing, New York and London, 1901, p. 409.

² Chicago, 1879, p. 254.

"I know that I hung
 On a wind-rocked tree¹
 Nine whole nights
 With a spear wounded
 And to Odin offered,
 Myself to myself;
 On that tree
 Of which no one knows
 From what root it springs," etc.

Elsewhere in the same work, Professor Anderson thus comments on this passage: "Odin hung nine days on the tree (Ygdrasil) and sacrificed himself to himself and wounded himself with his own spear. This has been interpreted to mean the nine months in which the child is developed in its mother's womb. Turn back and read the first strophes carefully and it will be found that there is some sense in this interpretation."² But Professor Anderson follows these remarks by giving some ingenious and exalted reasons for doubting the interpretation.

Supposing that something had been published on this subject, I recently took the liberty of writing to Professor Anderson to inquire in what work I might find the discussion. Under date of Sept. 19th, 1902, I received the following reply: "I am sorry I am not able to refer you to any discussion [of the relation] of Ygdrasil to parturition. The idea occurred to me when I prepared my mythology for publication. I have talked with Scandinavian mythologists on the subject and they say the nine days is suggestive." It seems, then, that this conjecture concerning Ygdrasil is Professor Anderson's own. But there are other things suggestive besides the nine days and the wounding of Odin with his own spear.

The Scandinavian Tree of Existence, it is said, sprung from three roots. This feature of the myth might be easily explained by saying that three was a sacred number with the northern myth-makers, and we all know how prone myth-makers are to

¹ "Ygdrasil."

² *Op. cit.*, p. 260.

introduce sacred numbers into their tales. Yet it must occur to the anatomist that the *funis* consists of three obvious elements—two arteries and a vein—and that, before circulation ceases, it apparently arises from three roots.

The old Norwegian story-tellers and bards so clothed their great Tree of Life with poetic imagery that it

"Flashed like the plane tree the Persian adorned with mantles and jewels,"

and it has become difficult for us to distinguish its original form. But I believe a careful study of the Gothic myths will yet reveal that the wonderful Ygdrasil, "a most sublime and finished myth," as Professor Anderson truly calls it, was, in the beginning, nothing more poetic than that which every midwife beholds when she performs her special functions.



THE LANSING SKULL. (FRONT AND BACK VIEWS.)



THE LANSING SKULL. (SIDE AND TOP VIEWS.)

FOSSIL HUMAN REMAINS FOUND NEAR LANSING, KANSAS

By W. H. HOLMES

The fossil remains of two human beings were discovered while digging a cellar-tunnel for the storage of fruit on the farm of Mr Martin Concannon, near Lansing, Kansas, in February, 1902. During the past summer the site was visited by a number of geologists, archeologists, and others interested in the history and antiquity of man in America, and already several more or less elaborate accounts of the discovery have been published in our scientific journals. The last and by far the most critical study is that of Prof. T. C. Chamberlin, which appeared in the *Journal of Geology* for October and November, 1902. Other papers are by Prof. S. W. Williston (*Science*, August 1), Mr Warren Upham (*Science*, August 29, also *American Geologist*, September), and Prof. N. H. Winchell (*American Geologist*, September).

I had the good fortune to accompany Professor Chamberlin on his first visit to the site, and to meet there also Prof. R. D. Salisbury, Prof. Samuel Calvin, Dr Erasmus Haworth, Dr George A. Dorsey, and Mr M. C. Long. Careful examinations were made of the tunnel and of the geological formations in the vicinity, as well as of the cranium preserved in the Kansas City Museum, and it was found that the accounts of the discovery previously published were essentially correct in every important particular. The human remains consist of a skull and a number of the larger bones of an adult man, and the lower jaw of a child of some ten years.

Owing to the difficulty of studying the formations in the tunnel, already well filled with farm products at the time of our visit, the idea of making additional excavations was suggested, and

through the kind offices of Mr Long it was arranged with Mr Concannon that the Bureau of American Ethnology should undertake this work. Mr Gerard Fowke, who, under my supervision, had been conducting researches in the well-known fossil bone-beds of Kimmswick, Missouri, was called in, and during the month of October a trench was opened into the relic-bearing deposits from the west at right angles to the tunnel dug by the Concannons, exposing the full depth of the deposits for a horizontal distance of about forty feet. Beside this the main cellar-tunnel was carried some twelve feet farther, and a chamber was excavated on the east side of the tunnel, opposite the point where the remains of the man were found. When this work was completed Professor Chamberlin joined me in a second visit to the site, and examinations of all the phenomena were made under the most favorable conditions.

In the following brief summary I rely for geological interpretations largely on the views of Professor Chamberlin, whose mastery of the intricate problems of glacial and post-glacial geology is everywhere acknowledged.

The remains were found beneath twenty feet of undisturbed deposits forming a little bench on which the Concannon dwelling stands. The child's jaw was encountered about sixty feet from the entrance of the tunnel, and the skull of the man ten feet farther in. There can be no doubt of the correctness of these observations.

The skull is well preserved, and corresponds closely in type with crania of the historic Indians of the general region. It presents no unique features and offers no suggestion of great age or of inferior organization. Front and back views are presented in plate XXXI, and profile and top views in plate XXXII. Its characteristics are briefly summarized by Dr Dorsey, as follows:

The specimen, after such reparation as has been possible, lacks all the bones of the face and small portions of the occipital, temporal, and frontal bones; hence no observations are possible on the face or base of the skull.

The bones are firm, hard, and comparatively thin. The sutures are normally serrated; the coronal and anterior half of the sagittal sutures are only very slightly serrated; lambdoidal and posterior half of the sagittal are moderately serrated.

From above the skull is pentagonal in form, with bulging parietals and narrow occiput. The glabella is only fairly prominent; the supra-orbital ridges near the glabella are well marked. The forehead retreats gradually and is uniformly convex. The vault reaches a considerable height and retreats rapidly to nearinion. The occipital region bulges decidedly.

The temporal lines are fairly well marked, but not pronounced, and extend slightly above the middle of the parietals. The mastoids, though much damaged, were evidently not pronounced. The occipital ridges and depressions are exceedingly faint.

The skull is of an individual probably from forty to fifty years of age, and, I am inclined to believe, that of a male, although the male characters are not at all pronounced. In its general shape the skull bears a striking resemblance to the crania of the Plains Indians, for example, the Blackfoot. Its measurements are as follows:

Maximum length.....	188 mm.
Maximum breadth.....	138 mm.
Cephalic index.....	73.

The only question likely to give rise to serious discussion is that of the age of the formations with which the remains were associated, and to this point I shall give chief attention. The bench occupied by the Concannon dwelling is squarish in outline, having a horizontal extent of about 150 feet from east to west and perhaps 160 feet from north to south, and its highest point is about thirty feet above the present flood-plain of the river (see figure 29). It rests against the base of a limestone spur of the river bluff, on the south side of a little valley that opens out into the river bottom at this point. The upper surface of the bench slopes away at a low angle from its junction with the limestone spur (*a*). Facing the river it presents a steep slope continuous with the face of the river bluff. On the north it descends abruptly to the bed of the rivulet, and on the west the slope is somewhat gentle to the small lateral valley on that side.

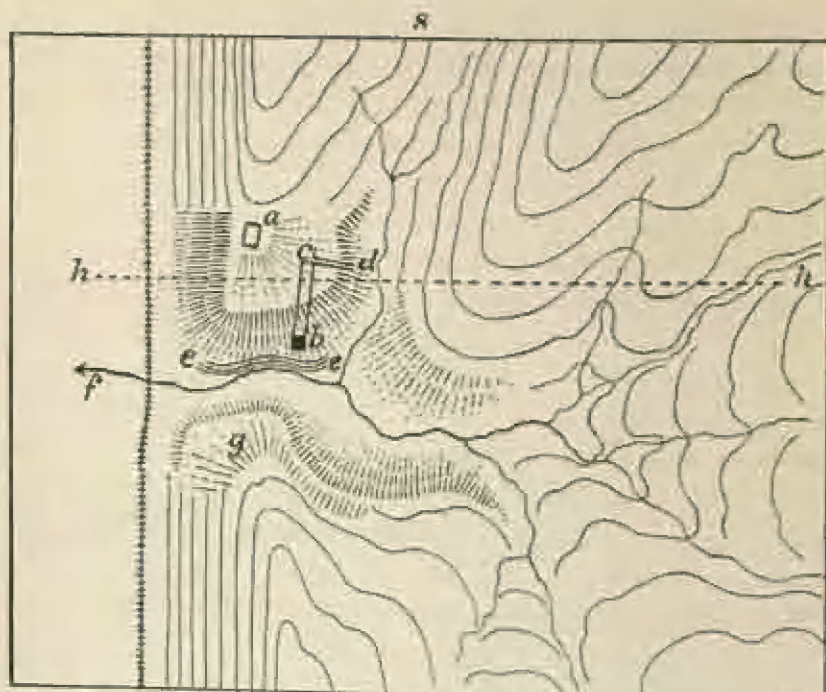


FIG. 21.—Sketch map of the Lansing site, indicating recent bench remnants in hachures. (a, Concession dwelling and point of contact of limestone river bluff and recent bench. A, Entrance to cellartunnel. c, Inner end of tunnel where skull was found. d, Trench opened by Bureau of American Ethnology. e-e, Outcrop of limestone in rivulet bed. f, Entrance of rivulet to Missouri river flood-plain. g, Contact of limestone spur and bench remnant on north side. A-a, Line of section, fig. 22.)



FIG. 22.—Section of the Lansing site showing bluffs and river beyond, looking south. (a, Concession dwelling and point of contact of limestone river bluff and recent bench. A, Entrance to cellartunnel. c, Inner end of tunnel where skull was found. d, Trench opened by Bureau of American Ethnology. e-e, Outcrop of limestone in rivulet bed. f, Entrance of rivulet to Missouri river flood-plain. e, Grade of stream bed.)

The cellar-tunnel enters the north face of the bench near the base (*b*, figures 28 and 29). The skull was found at *c*, 70 feet from the entrance, 20 feet from the upper surface of the terrace, and about 18 inches above the floor of the tunnel. The lateral trench is indicated at *d* in both illustrations.

The deposits composing the bench, so far as exposed, rest on the nearly level surface of a stratum of carboniferous limestone (*e-e'*), and the tunnel is dug so that this surface forms its floor. The deposits are believed by some to be true alluvial loess, derived directly from the ice front in the valleys above; they would thus represent one of the glacial stages. Others regard them as consisting of finely comminuted material derived from the loess beds of the neighboring slopes, and of other coarser materials from the hillsides, spread out in comparatively recent times by local agencies in and about the entrance to the little valley. The first of these views has been adopted by Prof. S. W. Williston, Mr Warren Upham, and Prof. N. H. Winchell; and the second is held by Prof. T. C. Chamberlin, Prof. R. D. Salisbury, and Dr Samuel Calvin. I am inclined to favor this latter view, not only because it appears to be sustained by the geological evidence, but because it is in harmony with what we already know of the history of man in America. The skull corresponds in type with crania of the historic occupants of the region,—the Indian tribes,—which fact carries with it, according to the view of some biologists, a presumption against its great antiquity; and again, there is as yet no substantial and unequivocal evidence that men of any race existed in America during the glacial period.

The geological features of the site, in so far as they relate to the question of human occupancy, may be briefly reviewed and their interpretation may be presented in the same connection. The first step in the history of the site requiring attention is the exposure or partial exposure of the nearly level limestone floor on which the materials of the Concannon bench were afterward deposited. This probably took place when the river channel

curved sharply in against the bluffs at this point, permitting the currents to break down and partially remove the superior beds of shale and limestone well within the entrance to the little valley. When this active erosion ceased, the limestone surface was strewn with rocky *débris* a foot or two deep, and in against the bluff at the southern margin there were heaps of coarse talus material upon which the two human bodies were cast or in which they were rudely buried: and just here we reach the point of divergence of the two interpretations with respect to the period at which these events occurred. The first view assumes that we are probably dealing with the Iowan epoch of the glacial period. If this is correct, the events following the deposition of the bodies would be about as follows: During this period the river, becoming burdened with silt from the receding ice front, buried the bodies and began to fill up its channel. Step by step the surface rose until the immediate valley was filled and obliterated, and the waters flowed out over the highest bluffs, depositing everywhere the mantle of silt known to geologists as loess. As the ice receded to the far north, deposition gradually ceased in this part of the valley, and the river, step by step, cut its way down again through the vast deposits that filled its former channel, leaving a succession of loess terraces, more or less well defined against the hill-sides, and finally, after many fluctuations, reaching its present level, which at extreme high water is from five to ten feet lower than our datum level—the limestone floor indicated at *e-e*, figure 29.

But are we warranted in supposing that the two human bodies became associated with the *débris* on the limestone floor during this great epoch in glacial history, or are we to adopt the opposing view that at the end of this episode, or long after its close, when the river had descended to nearly its present level, the floods uncovered the limestone surface within the entrance to the little valley, and that at this time the aborigines, doubtless the ancestors of our historic tribes, left their dead among the heaps of *débris*?

The latter view assumes that the river probably had little to

do directly with depositing the materials that buried the human bodies and now form the Concannon bench; that after clearing the limestone floor the current probably followed its habit of rapid change and shifted for a time to the eastern side of the broad flood-plain, leaving other agencies to control the destinies of the little valley now occupied by the Concannon farm. Naturally the deposits of the bench have been examined with minutest care with the view of determining the story of their accumulation. If laid down in water they should show decided evidence of assortment and bedding; if the result of redistribution of loess and other local materials through surface agencies, the deposits would present little evidence of assortment and no evidence of systematic stratification. Throughout the entire depth of these formations, as exposed in the tunnel and in the trench, there appears to be but one feature that can be construed as giving decided support to the view which favors fluvial origin. A thin seam of clay appears in the west wall of the tunnel, some three feet above the limestone floor, and extends from the entrance far back toward the south, rising at a low angle. The earlier examinations of this deposit led to the conclusion that the lower part, at least, of the formation had been laid down by the river, but subsequent investigations show that the layer is not continuous, that it is not found in the east wall of the tunnel opposite its appearance on the west side, and that it pinches out quickly to the west, no trace of it having been discovered in the walls of the great trench dug by the Bureau. It is just such a layer of water-laid clay as would accumulate in the bed of a sluggish stream running with the trend of the tunnel at this point, or through the presence of a small oblong pool of water left during a season of flood before the river finally deserted this level.

The deposit is composed for the most part of loess-like silt, through which, at all levels, are scattered fragments of limestone and shale, the whole presenting much variety of composition and irregularity of accumulation; hence it is surmised that the

history of its deposition may be somewhat as follows: When at a period indefinitely later than the close of the Iowan epoch, and possibly much later than even the close of the glacial period, the river retreated from the west side of the valley, leaving the limestone floor at the entrance to the little valley freshly exposed, the steep slopes of the valley, half a square mile in area, were mantled with loess deposits, and these, with coarser materials from the general surface, were carried down by creep and wash to the gateway of the little valley where, since active erosion by the river had ceased, they accumulated, burying the exposed rock surface and the human remains to a depth of twenty feet or more and spreading out in a fan-shaped delta on the river flood-plain about the mouth of the valley. The narrow entrance to the valley probably favored accumulation, and the weak intermittent rivulet must have been quite incapable of clearing the way and carrying the accumulated material far out over the plain to the river channel. At any rate it seems altogether reasonable to suppose that twenty feet or more in depth of this material could have been deposited within and about the entrance to the little valley. The amount of accumulation would be limited only by the length of time that the river channel remained far away to the east and by the supply of easily eroded material. It is readily understood, however, that between the period of the burial of the human bodies and the present time the river may have returned once or several times toward the west bluff, permitting active work in undermining and cutting down the limestone face. That it did return is strongly suggested by the apparent recentness of the cutting and the fact that the Concannon bench, the surface of which was at one time continuous with the flood-plain surface, is truncated on the face uniformly with the main bluff. This return of the channel to the west side would give the little stream the opportunity of lowering its channel to the present perfect adjustment with the river, and especially so since, as the centuries passed, the loess deposits had

been largely removed from the slopes of the valley above and rapid accumulation about its mouth by creep and wash had necessarily ceased.

The preferred interpretation of the phenomena, then, is that the relic-bearing deposits of the Concannon bench were not laid down in glacial times by the silt-charged waters of the Missouri, but that they are a remnant of delta-like accumulations formed in comparatively recent times within and about the mouth of the tributary valley by local sub-aërial agencies, all save the more protected portions having been removed by late encroachments of the ever-changing river.

The time involved would not be that required by the Missouri to lower its flood-plain from the upper level of the bench to the present high-water mark, a descent of thirty or thirty-five feet, but the period required to depress the flood-plain from a little above the surface of the limestone floor on which the bodies rested to its present level, a descent of from five to ten feet. The measure of this amount of erosion in years is the measure of the age of the Lansing man : this may be thousands of years, but at most it can be but a fraction of the time required by the other view ; for, according to that view, the river, after burying the human bodies, filled its channel with glacial deposits until it overflowed the highest bluffs, and then descended again to the present level. The time required to fill up the valley, three or more miles in width and nearly two hundred feet in depth, and then to cut this filling all out again can never be determined, since chronologic criteria are largely wanting ; but it might well reach ten, twenty, or even thirty thousand years. On the other hand, the time required by the river to lower its bed five or ten feet might possibly be expressed in hundreds rather than in thousands of years. It may be of importance to note, however, that even this amount of lowering need not be assumed in accounting for the facts. The high-water mark today along the Concannon bluff, with the river a mile or two away across a wooded plain,

might well be several feet lower than the highest level reached by a strong current driven directly or even obliquely against the bluff.

The anthropologist may readily find other than purely geological criteria to aid him in reaching his conclusions. It is a part of our common knowledge that men have occupied the American continent for a long period, but that they occupied it during the glacial epoch, or even at the period when the glacial front finally receded northward, is not demonstrated. Besides, as already mentioned, the cranium is well preserved and fresh-looking, and is nearly identical with crania of our historic tribes. Now when, as in the present case, two somewhat equally supported interpretations of the geological phenomena are possible,—the one making it appear that remains of men occur in formations where they could reasonably be expected, and the other carrying human occupancy back ten thousand or twenty thousand years,—the anthropologist may consistently accept, tentatively at least, the first of these interpretations, and the non-professional student of the subject may find it wise to at least withhold his full acceptance of either view until those geologists best qualified to discuss the special problems involved shall have reached practical unanimity.

As a result of my own observations at Lansing, and considering also the conclusions reached by Professor Chamberlin and his associates, I find it difficult to come to any other conclusion than that the human remains under consideration are properly classed as of post-glacial age, interpreting that term to cover all time subsequent to the final retreat of the ice from the region south of the Great Lakes.

The Lansing skull, illustrated in plates XXXI-XXXII, belongs to Mr M. C. Long, curator of the Kansas City Museum. It has been carefully repaired under the direction of Dr George A. Dorsey and is now deposited in the United States National Museum.

TYPES OF CULTURE IN PERU¹

By MAX UHLE

After an extended absence in South America I deem it desirable to present a brief preliminary report of my work there. I believe this cannot better be done than by giving a summary of results derived from a study of the general development of Peruvian culture as it appears to me after three years of research in different parts of the country.

During my first expedition to Peru I represented the interests of the University of Pennsylvania, while the work of the second expedition was conducted under the auspices of the University of California. The former researches were supported in part, and the second wholly, by Mrs Phœbe A. Hearst, to whom the University of California and students in general are so greatly indebted for her generous support of anthropological work. When the collections obtained by the various expeditions sent out by Mrs Hearst are eventually assembled in a museum, they will form a splendid monument to private activity successfully devoted to the scientific development of a new but great and prosperous state. I take this occasion to gratefully acknowledge the support given to my expeditions by Mrs Hearst, particularly as they have been among the few sent to South America with facilities for conducting excavations and have thus been enabled to obtain definite conclusions.

Entering Lima in 1896, it was only natural that I first became interested in the ruins of Pachacamac, lying not far away; for, in spite of much discussion, their character and age were still un-

¹ Presented by title at the meeting of the International Congress of Americanists, New York, October 20-23, 1902.

solved problems. At the beginning of my studies I had hoped to cast some light on these questions as well as to gain a better conception than that which prevailed regarding the complicated condition of Peruvian culture, the artifacts representing which form such a confused mass in all of our Peruvian collections. How far the origin, the age, and the religious significance of the principal deity worshiped at Pachacamac have been disclosed by these investigations will appear in my monograph on those ruins, written in 1898, which will be published at Philadelphia within the next few months.

I wish to touch here only on general questions respecting the development of the culture of Peru. Our ideas concerning the degree of civilization in pre-Columbian times by the inhabitants of the older American countries are not yet entirely freed from the prejudiced notion of generally regarding the various types of ancient culture as merely local styles, each being ascribed in some way to a different geographic area and to a different tribe;—we are still prone to see in them purely ethnical divisions and individual local types. In observing these types of culture we should pay attention particularly to their succession in time; for their importance as stylistic strata which succeeded and covered each other (and, for the greater part, covered a coëxtensive area), is far beyond that which they may possess as local types. We must introduce also into the archeology of the countries of America in which culture reached a relatively high degree, the leading points of view which enabled students to distinguish in European prehistory the successive Hallstadt, La Tene, German Conquest, and Merovingian periods. The method applied by Flinders Petrie in Egypt to prove the succession of styles by the gradually changing character of the contents of graves differing in age has given remarkable results. Still, the certainty of a succession of periods cannot be surpassed even by that when they are shown by geological stratification.

I found such stratification first at the base of the old temple of

the god Pachacamac, where graves were particularly numerous. The oldest temple covered a smaller area (figure 30, *a*) than the later one (*b*). At the base of the former occurred a large graveyard (*c*). Perhaps in consequence of the subsequent destruction of the temple, this older graveyard was covered by *débris* (*d*) fallen from the temple near its foot, and this *débris* was later built over by new front terraces of the temple. Now, it happens that the graves of the old cemetery (*c*) contained objects of

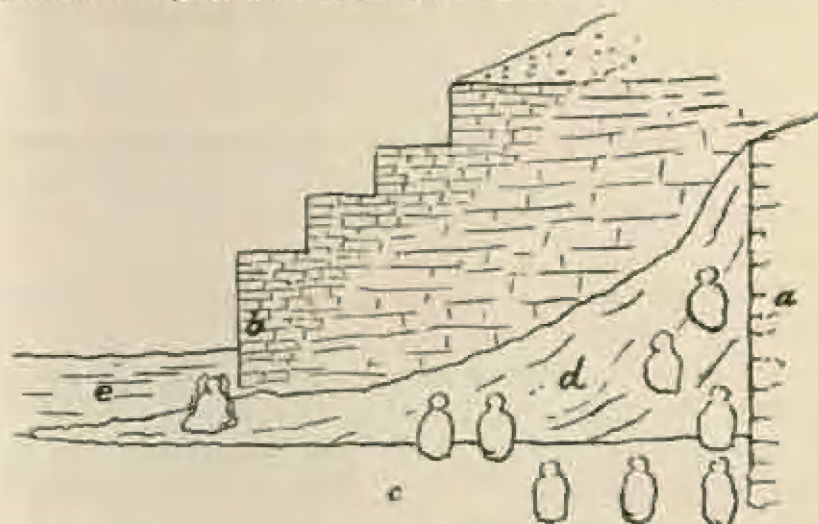


FIG. 30.—Section showing early and later temple walls and successive burials at Pachacamac.

the style represented in the monuments of Tiahuanaco, as well as objects of the same general character but showing epigonal variation. The layer of *débris* (*d*) contained a number of graves which were characterized by earthen vessels painted in red and black on a white slip. The superficial layer at the later front (*b*) of the temple, contained a few graves (*c*) of pure Incasic character. There is little doubt that the individuals whose remains were here found had been honored by burial directly at the front of the temple after its completion.

Looking around near the old town for other graveyards, I found one the contents of which were characterized by black

vessels of a kind so numerous in our museums, but not occurring in the three layers before mentioned. Other vessels, textiles, etc., of Incasic character occurred interspersed among them. A graveyard containing pure Incasic objects, but with an exceptional few of the black vessels, was discovered amid the ruins of the Incasic Temple of the Sun in the town. It was therefore natural to conclude that the period of these black vessels represented the last pre-Incasic form of the culture of the coast, where it was met by the Incas.

I had thus observed the following periods of culture succeeding each other at Pachacamac:

First, that of the classical style of the monuments of Tiahuanaco, with,

Second, that of a local epigonal development of the same style.

Third, the period of the vessels painted white, red, and black.

Fourth, the period characterized by certain black vessels.

Fifth, the period of the style of the Incas.

The results obtained during my second expedition to Peru were of a similar nature. It was shown by excavations at Chanchan, the old town of the Chimus, that their style, which was that met by the Incas in their valleys, was identical with the fourth style found at Pachacamac; and the identification of the style exemplified by the finely colored pottery of the valleys of Trujillo, Santa, etc., with that of the Chimus, so commonly accepted in our museums, was thereby excluded. The style of the finely colored ware mentioned above had so little in common with that of the Chimus, that there had passed one or perhaps two periods of quite different stylistic character between it and the true type of the later Chimus—that is, one of a certain black pottery quite different from the former, a stylistic development from the much older period of finely colored ceramics. This was found extensively during excavations made upon the Huaca del Sol, near Moche.

It seems, further, that the third period of Pachacamac was also represented among the historical periods of the valley of Trujillo. Vessels of the third and fourth styles of Pachacamac were discovered in graves in soil mixed with debris of pottery of the finely colored ware, showing that the latter antedated them.

A practical result of these discoveries was the finding that the Huaca del Sol, near Moche, commonly attributed to the Incas, had been constructed at about the third older period (even objects representing the style of the works of Tiahuanaco were found upon it), and had probably become a ruin at the time of the Chimus, as none of their relics nor those of the Incas were found upon this venerable monument. In fact, I observed four distinct and successive cultures in the valley of Trujillo.

The valleys of Chíncha, Pisco, and Ica, visited later, form a separate archeological area south of Lima. Here we find:

First, The Incas.

Second, An interesting culture, with some peculiar features, which immediately preceded the invasion of the Incas.

Third, Occasionally there are noticed certain graveyards corresponding to the first and second periods of Pachacamac.

Fourth, The most interesting culture is quite independent of and possibly preceded the others. The pottery which characterizes it resembles that of the period represented by the works of Tiahuanaco in the colors used, in the careful treatment by polishing, and in the manner of representing the characteristic detail of the closed four-fingered hand. Thus far it is clear that the age of this culture must approximate that of Tiahuanaco, but it differs entirely from the latter and from most of the Peruvian types in the freedom of style. It can be proved that it is the older sister, perhaps even the mother, of the peculiar older culture of the valley of Trujillo which has produced the beautiful colored vessels. But it is still more remarkable on account of its age, as it must have preceded the introduction of bricks for use in buildings. All the vast monuments which originated in that period were

constructed of roundish, ordinary balls of clay cemented together, and in no case is there any trace of the use of bricks. Some of these structures attained a length of more than three hundred meters, but they have long since been reduced by time to mere mounds. In pre-Incasic time, these mounds, like other natural elevations, were widely used for cemeteries, so that the destruction of these great buildings must have antedated even the last pre-Incasic period. It is therefore not impossible that the age of these monuments is even greater than that of the works of Tiahuanaco, but further investigation may be necessary to settle this question beyond doubt.

I may summarize the results as follows:

First. It will now be easier to give the correct relative chronological position to each new Peruvian culture which may be discovered.

Second. It is learned that the process of development and succession of periods of old Peruvian culture has been a long one. Stratum was laid over stratum during thousands of years. Were we to assign four hundred to five hundred years to each of the cultures heretofore discovered, generally four to five in each valley, we should find in this way alone that the development of the old cultures in Peru must have spanned two thousand years at least.

Third. The results are of importance in investigating the connection between the cultures of South America (Peruvian) and Central America; for, as the oldest cultures observed in Peru are of at least as high, if not of a higher type, than the later ones, it is not improbable that, if connection existed between the north and the south, it took place during the earliest period. As the Peruvian cultures are now gradually being classified according to age, it would be important to know, by similar means, the relative ages of Central American and of other South American cultures; for connections can have existed only between contemporaneous cultures; and only such, therefore, should be compared if fruitful results are to be expected.

Much is still to be done in this direction for other parts of America. Indeed, it is my wish to stimulate such work for all parts of the continent, in order that future knowledge of the general development of American cultures may be firmly established.

BOOK REVIEWS

Index-Tabellen zum anthropometrischen Gebrauche. Von Prof. Dr CARL M. FÜRST. Jena: Gustav Fischer. 1902. Sm. 4°, 35 pp.

Dr Fürst has published in a neatly bound quarto a series of twenty-nine index tables for use in somatology. The need of such tables was called to his attention by his investigations in Swedish anthropology in collaboration with Gustav Retzius. This need has been felt by many other somatologists, and led the present reviewer to prepare an almost identical set of tables two years ago, but he was not so fortunate as Dr Fürst in having a Retzius to defray the expense of publication. The tables are so arranged that one appears on each page; the larger ones are therefore limited to 55 dividends and 15 divisors, but in reality the tables are in series so that the divisors in the first seven tables run from 1 to 105 continuously. The quotients are reckoned to the second decimal place. The tables are comprehensive and apparently accurate. They were much needed, and we gladly acknowledge our indebtedness to the accomplished savants who have presented them to working somatologists.

FRANK RUSSELL.

Schädel und Skeletteile aus Peking. Von Dr K. A. HABERER. Jena: Gustav Fischer. 1902. 8°, 165 pp., ills.

In this memoir is described a collection of thirty-seven skulls and a few other bones which the author personally collected at Peking. There are nine female and twenty-eight male crania, there being no difficulty in distinguishing the sex. The skulls are described singly and quite fully. At the end of each description a summary is made, as, for example, in the case of skull number 12: "Male, about 30, eury-, meso-, hypsicephalic, leptoprosopic, hypsiconchus, leptorrhinian, leptostaphylin, prognathous, with extreme alveolar prognathism." Excessive alveolar prognathism, by the way, is frequently noted. Following the detailed descriptions are generalizations concerning capacity, the temporal, parietal, and other portions. The section devoted to the skeleton is especially interesting because of the information furnished concerning the practice of deforming the feet. Not only the original material presented will be found of value, but the tables also furnish a very useful summary of measurements and averages obtained by pre-

vious investigators of Mongolian skulls. The illustrations are numerous and of a degree of excellence that we have seldom seen equaled.

FRANK RUSSELL.

Notes of a Trip to the Veddahs of Ceylon. By Dr H. M. HILLER and Dr W. H. FURNESS, 3RD. [Separately issued from the Bulletin of the Free Museum of Science and Art, University of Pennsylvania. Vol. 3, No. 2, April, 1901.]

Drs Hiller and Furness present an interesting account of the Veddahs of Ceylon, whom they visited recently. Little is known of this aboriginal people, who are rapidly approaching extinction. Rather empirically nowadays, they are divided into Coast, Village, and Rock Veddahs, from their geographic location, but this evidently marks no tribal distinctions. Though their visit was brief the authors have made skilful use of their eyes and camera, and the result is a decided contribution to our knowledge of this interesting people.

WALTER HOUGH.

PERIODICAL LITERATURE

CONDUCTED BY DR ALEXANDER F. CHAMBERLAIN

[NOTE.—Authors, especially those whose articles appear in journals and other periodicals not entirely devoted to anthropology, will greatly aid this department of the *American Anthropologist* by sending direct to Dr A. F. Chamberlain, Worcester, Massachusetts, U. S. A., reprints or copies of such studies as they may desire to have noticed in these pages.—EDITOR.]

GENERAL

Adachi (B.) Hauptpigment beim Menschen und bei den Affen. (Anat. Anz., Jena, 1902, XXI, 16-18.) Treats of pigmentation in man and the simians, which, when marked, produces the so-called "blue spots" in children of various races. The cells giving rise to this pigmentation are microscopically observable in the white race, and often are quite numerous. According to Dr Adachi we have here the remains of a pigmentation of the skin once present in the ancestor of man, as it is still in some of the existing anthropoids.

Anstchin (D. N.) Rudolph Virchow. (Russk. Antr. Zhur., Moskva, 1901, II, Nos. 3-4, 1-xxxii.) Part I (1-ix) biographical sketch; part II (x-xxxii) Virchow as an anthropologist. The article is illustrated with 2 portrait plates and 2 figures.

Baetz (E.) Ueber den Nutzen wiederholter Messungen der Kopfform und der Schädelgrösse bei denselben Individuen. (Corr. Bl. d. d. Ges. f. Anthr., München, 1901, XXXII, 131-133.) Plea for repeated cranial measurements on the same individual. Every two years stature, finger-reach, circumference, length and breadth of head, certain facial measurements, etc., ought to be recorded. Dr Baetz expresses the opinion that the growth of the skull does not end with natural ossification, but continues till about the fiftieth year.

Bottazzi (F.) Leonardo da Vinci filosofo-naturalista e fisiologo. (Arch. p. l'Antr., Firenze, 1902, XXXII, 255-

273.) In this essay the author seeks to do what Müntz, Cerni, and Solmi have seemingly not done, viz., to set in a proper light Leonardo da Vinci as a biological investigator and natural philosopher. Many sayings and observations of the great Italian are quoted. Bottazzi esteems him one of the "representative men," or "heroes," of whom Emerson or Carlyle might have written.

Brabrook (E. W.) Presidential [Folklore Society] Address. (Folklore, London, 1902, XII, 12-28.) Chiefly concerned with the discussion of recent opinions on magic and religion by Fraser, Lang, etc.

de Carvalho (T. A.) As companhias portuguesas de colonização. (Bol. Soc. de Geogr. de Lisboa, 1901 [1902], 265-361.) Historical account of the rise and progress of Portuguese colonization and of the colonization companies during the XV-XIX centuries in Africa, Asia, the Indies, and America.

Conningham (D. J.) The human brain, and the part which it has played in the evolution of man. (Rep. Brit. Assoc., London, 1901, LXXX, 776-788.) Presidential Address to Section H., Anthropology.

Dexter (E. G.) A study of twentieth century success. (Pop. Sci. Mo., N. Y., 1902, LXI, 241-251.) Based upon the data in *Wad's Wife in America*. Age, profession, education, etc., are considered. Earliest to gain distinction is the musician, very late comes the inventor. Out of every inhabitant of the U. S. over 21 years of age one in

Dixiet--Continued.

six hundred appears to have attained distinction, of all living alumni of colleges one in one hundred and six. With woman nature works quicker and nurtures slower. The paper is accompanied by graphic figures.

Duckworth (L. H.) Les fractures des os des orangs outangs et la lésion fémorale du *Pithecanthropus erectus*. (L'Anthrop., Paris, 1902, XIII, 204-206.) Treats of fractures in a right humerus and two bones of the right fore-arm of a gorilla from a Bornean cave. The exostosis on the humerus is due to the abnormal position of the radius caused by a fracture of the cubitus. This is suggestive in connection with the exostosis on the femur in the *Pithecanthropus erectus*.

Fischer (E.) Zur Kenntnis der Fontanella metopica und ihrer Bildungen. (Ztschr. f. Morph. u. Anthr., Stuttgart, 1901, IV, 17-30.) Describes, with 2 plates, 3 cases in new-born children and 10 in adults of remains of the metopic fontanelle.

Frassetto (F.) Sur les fontanelles du crâne chez l'homme, les primates et les mammifères en général. Essai d'une théorie topographique. (L'Anthropologie, Paris, 1902, XIII, 209-218.) In this article, with 3 text-figures, the author maintains the theses: A fontanelle can be formed and persist only where three or more centers of ossification meet. Number, position, and form of fontanelles are sensibly constant and depend upon the centers of ossification limiting them,—permanence of fontanelles is related to persistence of sutures. In each fontanelle may be formed and persist one or more supernumerary ossicle or fontanelle-bones. On pages 210-214 are listed and described 22 fontanelles. Papillault considers the conclusions of Frassetto too dogmatic.

Primi tentavi per studiare la variabilità del cranio umano col metodo quantitativo statistico di Camerano e col metodo Sergi. (A. d. Soc. Rom. di Antr., Roma, 1901 [1902], VIII, 156-197.) In this article, with 32 pages of tables of descriptions and measurements and one table of curves, the author gives the results of investigations by the Camerano-Sergi methods of the Mondio collection of 180 skulls

from Messina. The conclusions arrived at are: The variability of the cranium is greater than that of the face. The variability of the vault is greater than that of the base. Variability decreases progressively with age. Variability is greater in woman than in man. Dr Frassetto considers that the Sergi method will conduce to a more rational study of the phenomena of cranial variation. On page 197 a list of 9 papers, 1900-1902, by Camerano is given and the introduction (156-160) deals with the history of the methods employed.

— Osservazioni comparative sul foro olecranico. (Ibid., 204-206.) Exhaustive review of literature relating to the occurrence of the olecranic perforation in man (fetuses, children, adolescents, adults of various races, criminals, prehistoric and fossil man) and the animal series from the primates down to the monotremata. Pages 200-204 treat of the olecranic perforation as an acquired characteristic, from the point of view of mechanism, and as a hereditary characteristic. The bibliography (204-206) counts 32 titles. The data are not sufficient to warrant dogmatic conclusions, but the author believes that the common ancestors of the anthropoids and man possessed this perforation. No cases of the olecranic perforation in fetuses and children are recorded; some 1058 humeri of European adults have been examined by the author. The 34 humeri of criminals show 14.7%. Dr Frassetto seems not to have noticed the paper of Dr D. S. Lamb in the *American Anthropologist*, 1899, III, 159-174.

Fritsch (G.) Das Problem der Rassen-einteilung des Menschen im Lichte des Werkes von Stratz. "Die Rassen-schönheit des Weibes." (Globus, Braunschwg., 1902, LXXXI, 31-34.) Discusses the question of human races in connection with Stratz's recent book on *The Racial Beauty of Woman* (Stuttgart, 1901), the ideas of racial differences and resemblances set forth in which he largely shares and practically expounded himself in 1881. From the general mass of mankind Dr Fritsch marks off the really primitive races (*Urvölker*), one for each continent: Europe-Asia (the primitive European with the Aino, Veddas, etc.), Africa (Bushman with Akka, Obongo, etc.),

Fritsch—Continued.

Australasia (Alfuru, Papua, Aetas, etc.), America (the Indians of South, Central, and a part of North America). These are the "protomorphic" races of Stratz. Next come the races which from time immemorial have had a rather fixed habitat (white, yellow, black; Mediterranean, Mongolian, negro), the "stock-races" (*Stammesrassen*) of Fritsch and the "archimorphic" of Stratz. After these come the "metamorphic" races, due to intermixture of the primitive races, influence of climate, food, etc. Among such are to be counted the Ethiopian (Hamitic), white-black; the "Turanian" and Finno-Tataric, white-yellow; the Indo-Chinese, white-yellow (the coast Malays are exceedingly "metamorphic"); the negroes of Malaysia; the Hottentots (Bushman-Egypto-Arab). With regard to America Dr Fritsch holds that the primitive race is best represented in the mountainous regions of Mexico, Yucatan, and Peru. Upon these from the northwest (Asia) and also from the northeast (Europe) later migrating races impinged. The universal ethnic fact is, however, the traversing of all the continents by the "stock-races" and the suppression by these of the feeble primitive inhabitants and the less-gifted "stock-races" as well.

Gale (M. C. and H.) Children's vocabularies. (Pop. Sci. Mo., N. Y., 1902, LXX, 45-51.) Gives details concerning the vocabulary and speech of a boy and girl each two-and-a-half years old. On the day he was this age the boy actually used 9200 words (of which 751 were different) and the girl 8092 (629 different). Another boy used on his second birthday 19,507 words (803 different). These data are of interest in connection with the growth and limitations of the vocabulary of the adult.

Grevers (J. E.) Deux nouveaux instruments craniométriques. (L'Anthropologie, Paris, 1902, XLII, 249.) Brief notes on an instrument (gliding compass with third, movable limb) which can be used as a compass, a goniometer, and a cyclometer; and another for reading angles directly.

Hough (W.) Histoire de l'éclairage. (Ibid., 197-203.) The English original of this paper appeared in the *American Anthropologist*, 1901, N. S., III, 342-352.

Hughes (T. McK.) On the natural forms which have suggested some of the commonest implements of stone, bone, and wood. (Arch. J., London, 1901, LVIII, 199-213.) In this interesting, but somewhat imaginative essay the author seeks to show how primitive weapons and implements have been modeled upon or copied from the bones of animals and other natural objects. The boomerang, e. g., goes back to a cetacean rib, other Australian implements to the jawbone of the kangaroo, etc.

Amber. (Ibid., 35-46.) A study of amber in all its aspects. Treats in particular of amber-deposits, etc.

Inauguration du buste d'Abel Hovelacque à l'École du Livre. (Rev. de l'Éc. d'Anth. de Paris, 1902, XII, 147-150.) Speech of M. Julien Vinson at the installation of the bust of Abel Hovelacque at the École Estienne, March 9, 1902.

Ivanovski (A.) Zábvi a raslitichich' tchelovercheskich' ras'. (Russk. Antz. Zhur., Moskva, 1901, II, Nos. 3-4, 203-212.) Résumés, with 2 text-figures and bibliography of 47 titles, literature relating to the teeth of the various races of man.

Keith (A.) The significance of certain features and types of the external ear. (Nature, London, 1901, LXV, 16-21.) In this article, with 6 brief tables and 5 text-figures (2 of these represent 60 types of ear), the author discusses ear-types in man and the anthropoids, Darwin's point, the lobule, etc. Two types of the external ear are specially noteworthy, the "orang-type" and the "chimpanzee-type" of human ear. — the first has undergone marked retrograde changes, the other has retained its primitive development. The first is also the small, "aristocratic" ear, the second the large expansive ear often made the subject of popular wit. Women show the orang-type in 38-51%, men in 16-27%,—on the average 45 and 18% respectively. Here, as elsewhere, woman foreshadows the coming race. In Kerry (Ireland) there is a marked preponderance of the chimpanzee-type; among Jewish women the orang-type prevails. Ninety per cent of Hottentots show the orang-type, and "it is very frequent, although of a characteristic type, in certain races of negroes."

Keith—Continued.

The orang-type is twice as common in fair-haired men as in black-haired men, but in women "black and fair show both types with an equal frequency." Insane people appear not to differ from normal individuals in the matter of these ear-types, while the small number of congenital idiots examined seem to indicate a prevalence of the orang-type above normal and of the other below normal. In criminals the facts would indicate that "the criminal class is recruited in undue proportion from the group of men who manifest the orang-type of ear and the women who possess the chimpanzee-type." As compared with normal people the sexual ratio is inverted. The insane and criminal classes "are drawn with an undue proportion from those in which Darwin's point is pronouncedly present." But Darwin's tip is the persistence of an ancestral (or fetal) form; while the two ear-types in question are "symptoms merely of progressive or retrogressive development." The lobule is "a recently added and progressive structure." It is larger in the female than in the male and larger in the white than in the black races of man. No marked aberrancy of its development seems to characterize the insane and criminal classes. Dr Keith holds that the external ear is by no means a decaying structure (its relations to sound-catching would forbid that),—the antihelix, e. g. having a development in man unknown elsewhere.

Kern (H.) Einige Worte rücksichtlich der Frage betreffs der Organisation der ethnographischen Abtheilung des Russischen Museums Kaiser Alexander's III. (Int. Arch. f. Ethn., Leiden, 1902, 20-31.) Resumes the ideas of Professor Smirnov of Kazan on the arrangement of an ethnographical museum. A special and a general division are advocated, the one dealing with peoples, the other with culture-elements. The ethnographic distribution-map is indispensable.

Kirchoff (Dr.) Die Höhenmessung des Kopfes, besonders die Ohrhöhe. (Allg. Z. f. Psychiatrie, Berlin, 1902, LIX, 365-389.) General discussion of the various procedures (Virchow, Ranke, Vierordt, Wilsen, Broca, Benedikt, Balz, Muhr, Ecker, Langer, Friorip, Welcker, Rieger, Rentsch, Pfisterer,

Kellner, Meynert) for measuring the height of the head, the ear-height in particular.

McGee (W J) The American Anthropological Association. (Science, N. Y., 1902, N. S., XVI, 309-316.) Brief account of meeting and formation at Pittsburg, June 30, 1902, with list of officers, etc.

McKendrick (J. G.) Experimental phonetics. (Nature, London, 1901, LXV, 182-189.) Interesting account, with 22 text-figures, of recent progress in the experimental study of phonetics and the application of the graphic method to the movements of speech. The phonocautograph, logograph, *Sprachschreiber*, manometric flame method, mirror-apparatus, photographic, chrono-photographic, gramophone, and other methods are briefly described and illustrated. The author appeals for a phonographic museum.

Manouvrier (L.) Notes sur quelques prodiges humains exhibés à Paris en 1901. (Rev. de l'Éc. d'Anthr. de Paris, 1902, XII, 11-19.) Brief accounts and discussions of human "prodigies" (belonging to the Barnum-Bailey circus) exhibited at Paris in 1900-1901 and visited by medical men. The following are treated: Glass-eater and petroleum-drinker; Maxey, the needle-knig; the human pin-cushion; the man who can lengthen his cheeks; Hermann, the chain-breaker; Billy Wells, the man with the unbreakable head; the living skeleton; the telescoping giant (varies his height and also his arm-length); the albino contortionist; two xiphopagous twin couples; the dwarfs Peter the Great and Queen Mab. The author takes quite a nonchalant view of the deceptions and tricks involved in some of these cases.

Mantegazza (P.) Prime linee di psicologia positiva. II. I sensi. III. La sensibilità generale. (Arch. p. l'Anthr., Firenze, 1902, XXXII, 145-156, 217-252.) General discussion of the senses and sensibility from the anthropo-psychological point of view. The senses ascend in an intellectual scale from touch to sight, but every sense has its particular sphere of action. Civilization has atrophied the nose, preserved and even refined taste, improved touch, diminished probably (but helped by inventions) sight and hearing,

Mantegazza—Continued.

—in short, of the five senses three have degraded and two improved. There are painful pleasures and pleasurable pains. All is continuous in nature. The boundaries are made by men.

Packard (R. L.) Views of Dr. Rizal, the Filipino scholar, upon race differences. (Pop. Sci. Mo., N. Y., 1902, LXI, 222-226.) Translation from the German of Mumentritt in the *Internationale Archiv für Ethnographie*, vol. X.

Papillaut (G.) Sur les angles de la base du crâne. (L'Anthropologie, Paris, 1902, XIII, 243-248.) Discusses method of measurement of angles of the base of the skull in connection with a new instrument devised for the purpose by the author. Also the results obtained by such measurements. Certain differences noted between the negro and the white races are considered.

Papini (G.) La teoria psicologica della previsione. (Arch. p. l'Antr., Firenze, 1902, XXXII, 351-375.) According to the author, "prevision, the visible or invisible end of the constructive activity of the mind, a vital necessity, the aspiration and continuous tendency of science, is a wonderful instrument, which man will learn more and more to enjoy, yielding him inspired aids in his millenary labor to possess things." Until the problem of memory is solved we can hardly expect to discover the genesis of prevision.

Regalia (E.) Se il piacere sia movente e l'emozione irradutibile. (Ibid., 307-350.) The author sustains the thesis that the psychic cause of action is pain, because it is the only constant and immediate antecedent. The views of Papini, Vaccaro, Pilo, Bain, Paulhan, and Irons are discussed.

Rizal (J.) See Packard (R. L.)

Rose (H. A.) Unlucky children. (Folk-Lore, London, 1902, XII, 63-66.) Customs and superstitions relating to the place of the child in the family. First-born, twins, *trikhal* (third conception, or child born after three children of the opposite sex), eighth child, etc., are considered. Most of the data are from India, and pages 63-67 are concerned with the *trikhal*.

Schlosser (N.) Die menschenähnlichen

Zähne aus dem Bohnerz der schwäbischen Alp. (Zoolog. Anz., Leipzig, 1901, XXIV, 261-271.) The teeth found in the "Bohners" of the Swabian Alp, the author (with Branco) ascribes to the fossil *Dryopithecus*, except one, which, he thinks, belongs to a new fossil anthropoid (named by him *Aethropodus Brancoi*), descended from the same stock as the *Dryopithecus*.

Schrader (F.) Lois terrestres et coutumes humaines. (Rev. de l'Éc. d'Anthr. de Paris, 1902, XII, 1-10.) After defining the term "law," the author discusses in general fashion the habits of man "as shaped by the terrestrial world." Food, clothing, house, fire, hunting, weapons, tools are very briefly referred to.

Schwalbe (G.) Ueber die Fontanella metopica (medio-frontalis) und ihre Bildungen. (Ztschr. f. Morph. u. Anthr., Stuttgart, 1901, III, 93-126.) General discussion and description of author's own observations of the metopic fontanelle and its varieties of three sorts. The origin of these formations is still somewhat unexplained. The article is illustrated with 2 plates and 9 text-figures.

Sighele (S.) Latin Europe and American imperialism. (Intern. Mo., Burlington, Vt., 1902, v, 655-670.) An interesting study by an eminent Italian criminologist of certain aspects of the "Teutonic peril," the transformation of the United States into an aggressive world-power, etc. The ancient and modern imperialisms are compared,—the Latin was military and aristocratic, the Teutonic (American) is economic and capitalistic. One was personified in the military conqueror, the other is personified by the successful trader,—differences of race. Sighele holds that if the Teutonic races unite their destinies with militarism instead of with pacific civilization, they will sink and the Latin races, now left to develop their own energies, rise once more.

T. (S.) Ein seltener Fall von Polydactyle. (Globus, Bensching., 1902, LXXXI, 15.) Brief account (after Stopnitzky), with 2 text-figures, of what seems to be a very complete case of polydactyly,—an eleven-toed foot in a 72-year old Jewess of Lublin. All but one of the toes are perfectly movable and all but two three-membered. No other

T.—Continued.

case of eleven toes seems to have been recorded, and but two of ten toes, four of nine, eight of eight.

Thorndike (E. L.) Marriage among eminent men. (Pop. Sci. Mo., 1903, LXI, 328-329.) Based on *Who's Who in America*. Statistics seem to show that "gifted men marry at almost the same ages as the multitude," and that there "is thus little or no avoidance of marriage peculiar to gifted men." There is also no marked proof of increase of age at marriage in recent years.

del Torto (O.) Un cenno fisiologico degli stati ipnotici. (Arch. p. l'Antr., Firenze, 1902, XXXII, 275-281.) According to the author, thought is the highest expression of a psychic energy into which nervous force resolves and concentrates itself. The action of man upon man isesthesiogenetic. Electric energy is synonymous with neuro-psychic energy. Between the hypnotizer and the hypnotized polarization, communication, and transference are established.

Vierkandt (A.) Die Selbsterhaltung der religiösen Systeme. (Vjhrss. f. wiss. Philos., Leipzig, 1902, XXVI, 205-220.) Treats of deceit, false statistics, setting up of uncontrollable assertions and demands impossible of fulfilment, suggestion, fear, rack and ordeal, dreams and ecstasy, as factors in the preservation of religious system; all factors of a relatively singular and primitive character. Religion tends continually to acquire an apparently infallible proof to justify its existence. The argument is enforced by references to primitive beliefs and practices.

— *Natur und Kultur im sozialen Individuum.* (Ibid., 361-382.) General discussion of the significance of "nature" and "culture" for the social individual, with particular reference to the recent utterances of Heinrich Rickert upon the subject, and those of other writers of the last few years. In many respects primitive peoples are nearer to nature than civilized, woman than man, agriculture than industry.

Virchow (R.) Ueber Schädelform und Schädeldeformation. (Corr.-Bl. d. d. Ges. f. Anthr., München, 1901, XXXIII, 135-139.) General discussion. From

his observation of the *crâniens* Virchow came to the conclusion that "the same forms, which, in whole peoples appear ethnologically as types, can also arise pathologically in individual human beings through the influence of particular diseases." Nor is it very easy always to say which is the normal form. Nor can we always declare exactly how far growth is atypical, since the typical form may appear in reduced fashion. The boundary between cephalonia and hydrocephaly cannot be stated off-hand. Size, again, does not determine form. There is a geography of deformations—there seem to have long existed geographical regions of deformation, where not merely the custom existed, but where also a form peculiar to those regions was to be met with.

Vorobiev (V. V.) Нарѣзніе ѣхо ієоловека. (Russk. Antr. Zhur., Moskva, 1901, II, Nos. 3-4, 47-107.) The eight sections of this monograph, which is provided with 5 text-figures, 26 tables, and a bibliography of some 30 titles, touch upon almost every aspect of the outer ear in man,—individual characters, age, sex, relation to height and other physical characteristics, race, degeneration, crime, abnormality, disease, mental and physical deterioration, etc. Among the author's conclusions are the following: Woman's ear is absolutely smaller but relatively larger than man's. The ear of the child is disproportionately large. The "Satyr Hocker" is five times as common in children as in adults, and twice as frequent in women as in men. With increase of stature the size of the ear decreases relatively. Absence of the lobule is frequent among Mongolian peoples. Most of the degeneration-forms of the ear said to be characteristic of psychopaths are really embryonal or arrested forms, which occur in healthy and normal human beings almost as often as in the psychopathic degenerates. The article in the *Russian Anthropological Journal* is really a résumé of Vorobiev's elaborate study with the same title, which appears as volume xx (Moskva, 1901, pp. 223) of the *Trudj Antropologičeskogo Otděla*, with 9 text-figures, 173 tables, and a bibliography of 140 titles (pp. 201-203). See Keith, *ant.*

Walkhoff (O.) Der Unterkiefer der Anthropolomorphen und des Menschen. (Biol. Cbl., Berlin, 1901, XXI, 582 ff.)

Walkhoff—Continued.

Preliminary note on a larger study to appear in Selenka's *Menschaffen*. As compared with the simian, the human lower jaw is "reduced" as regards the teeth and the anterior jaw. In man the form of the chin is related to the exercise of the function of speech. The Shipka jaw he regards as that of a ten-year-old child, not the hyperostotic jaw of an adult with marked dental retention (Virchow). The lower jaw of Predmost rather supports Walkhoff's view.

Wead (C. K.) Contributions to the history of musical scales. (Rep. U. S. Nat. Mus., Wash., 1900 [1902], 417-462.) In this essay, with 10 plates and 6 text-figures, the following topics are treated: Stages of development of musical scales, stringed instruments, flute type, resonator type, influence of the hand, composite instruments. The author recognizes four stages of development (primitive,—no more indication of a scale than in sounds of birds, animals, nature; stage of instruments mechanically capable of furnishing a scale; stage of theoretical melodic scales,—Greek, Arab, Chinese, Hindu, Medieval, etc.; stage of the modern harmonic scale and its descendant, the equally tempered scale) which "correspond in a rough way to the recognized four culture stages, namely: the savage, barbarous, civilized, and enlightened." The conclusions arrived at in this paper, devoted to the second stage, are: "The primary principle in the making of instruments that yield a scale is the repetition of elements similar to the eye; the size, number, and location of these elements being dependent on the size of the hand and the digital expertness of the performer." The songs of birds, the overtones of the human voice and harmonics produced on the horn can have had little influence upon the establishment of scales.

Winternitz (M.) Die Flutagen des Altertums und der Naturvölker. (Mitt. d. Anthr. Ges. in Wien, 1901, XXXI, 305-333). After giving a list (75 items) of all flood-myths recorded in works accessible, the author classifies and analyzes them under the following heads: Flood-myths not properly so-called, flood-myths without heroes, flood-myths with heroes. In connec-

tion with the myths themselves these points are considered: Cause of flood, the flood itself and the description of it, the extent of the flood, the hero and the rescued people, the means of safety (ark, boat, etc.), the prophecy of the flood and the warning of the hero, the taking along the "seed of life" (plants, animals), the duration of the flood, the end of the flood and how it was known by the hero (sending forth of birds, etc.), the fate of the hero after the flood and of the rescued people and the human race. Dr. Winternitz is of opinion that the local legends called forth by actual local events are the originals, and that out of them human fancy came to fashion cosmogonic deluge-myths. No nature-myth is to be assumed, as some mythologists have maintained. He thinks that the wide variations and disagreements of the deluge and flood-myths of other peoples but add to the significance of the identities and resemblances between the flood myths of the Babylonians, Hebrews, Hindus, Persians, Greeks, etc., which seem to have sprung from one source. It is worth noting that not all peoples possess flood-myths. Some of the myths discussed in the article can be read more at length in Usener's *Die Sintfluten* (Bonn, 1899) and Andree's *Die Flutagen* (Braunschweig, 1891), which Dr. Winternitz has used as authorities.

Wolf (J.) Ein neuer Gegner des Malthus. (Ztschr. f. Sozialw., Berlin, 1901, IV, 256-289.) Critical review of F. Oppenheim's recent book, *Das Bevölkerungsgesetz des T. R. Malthus und der neueren Nationalökonomie* (Berlin, 1901).

Woods (F. A.) Mental and moral heredity in royalty. (Pop. Sci. Mo., 1902, LXXI, 369-376, 449-460, 506-513; LXII, 76-84.) Treats of Houses of Hanover, Saxe-Coburg, Hohenzollern, Hapsburg, Romanoff, Montmorency, Condé, Vasa, etc.

Zuckerlandl (E.) Zur Morphologie des Gehirns. (Sitzb. d. anthr. Ges. in Wien, 1901, 146-147.) Brief abstract. Chiefly treats of the "Affen-spalte" and the convolutions. The high development of the convolutions in the brain in some American monkeys is to be explained not as a phylogenetic phenomenon but as a case of convergence.

EUROPE

Adlerz (G.) *Arkæologiska undersökningar i Medelpad sommaren 1899.* (K. Vitt. Hist. o. Ant. Ak. Meddel., Stockholm, 1900 [1901], 1-58.) Gives account of investigation of numerous mound-graves of the iron age (chiefly the first five centuries A.D.) in the region of Medelpad on the north Swedish coast. The corpses had been burned, but in few instances were the remains in urns. Some of the larger bones, gathered in heaps, looked as if they had been washed (the author thinks not). In 12 out of the 29 graves examined in the summer of 1899 and in 8 out of the 30 examined in the summer of 1898 fragments of tiles were discovered.

Alcenius (O.) *Fyra anglosachsiska tyska myntfynd i Finland, 1894-1897.* (Finska fornm. Tidskr., Helsingfors, 1901, XXI, No. 2, 1-61.) Gives, with 54 figures, and a résumé in German, an account of very important finds of coins (German 2,482, Anglo-Saxon 410, others 105) in the parishes of Nousis and Lundo (near Åbo) and at Tavastehus in southwestern Finland and in the parish of Kuusamo in north Finland. The latest coins found date from the end of the eleventh century A.D.

Almgren (O.) *Ett grafält från äldre järnåldern vid Alvastra i Östergötland.* (K. Vitt. Hist. o. Ant. Ak. Meddel., Stockholm, 1900 [1901], 94-121.) This article, with 19 text-figures, gives the full account of investigations of which a résumé was noted in the *American Anthropologist*, 1901, 3, 3, III, 554.

von Andrian (F.) *Ueber russische Volkszaubersprüche.* (Sitzb. d. anthr. Ges. in Wien, 1901, 132-138.) General discussion of Russian folk-charms or magic sayings, based upon Miller's article in the *Russkato Mysl* for July, 1896, on "Assyrian conjurations and Russian folk-charms." The author concludes that the coincidences noted by Müller between the magic formulae of the Russian peasant and those of the ancient Assyrians belong mostly, if not all, to "the common human inventory" of such things, and do not in themselves prove borrowing or transmission in the way suggested.

Aussagen über die Transkription der finnisch-ugrischen Sprachen. (Ans. d.

finn.-ugr. Forsch., Helsingfors, 1902, II, 28-41.) Symposium on the transcription of the Finno-Ugrian tongues, and discussion of Setälä's opinion (1901, 1, 14-52) on the matter. Sieber, Thomsen, Karanov, "Q," Karjalainen, Samoyl, Teis, Balassa, Szaniyel, express their views.

Balliot (L.) *Les tumulus d'Essey-les-Eaux, Haute-Marne.* (Rev. de l'Éc. d'Anthr. de Paris, 1902, XI, 25-26.) Discusses, with 5 text-figures, the finds (bronze and iron ornaments) found in the tumuli of Essey-les-Eaux. The iron objects are rare as compared with the bronze, and the tumuli belong probably to the first iron age.

Blanchet (A.) *Nouvelles observations sur la monnaie barbare de Limoges.* (Bull. Soc. de Rochochouart, 1901-1902, XI, 60-63.) Résumés data concerning the barbaric coins of Limoges. A new variety inscribed to St Martial is noted.

Boehrendtz (F.) *Grafältet vid Ofre Aleback.* (K. Vitt. Hist. o. Ant. Ak. Meddel., Stockholm, 1896 [1901], XXV, 107-132.) Gives account, with 22 text-figures, of the author's investigation in 1893-1896 of a cemetery (partly late La Tène, partly early "Roman" iron age) on the island of Öland. In the La Tène graves, the corpses had been cremated and the articles deposited with them were chiefly weapons. The graves of the "Roman" iron age (first two centuries A.D.) contained skeletons (mostly in stone cists), with pottery, iron knives, etc.

Boissot (E.) *La redoute de Coligny à Pénzol.* (Ibid., 40-45.) The author expresses the opinion that the so-called "Coligny's redoubt," said to have been built at Pénzol in 1569 after the battle of Jarnac, "is simply a prehistoric fortification, a Gallic oppidum."

Breuil (P. Abbé) *Station de l'âge du renne de Saint-Marcel, Indre.* (L'Anthrop., Paris, 1902, XII, 145-165.) Treats, with 9 figures, of the "station" of St Marcel (Department of Indre), which belongs to the "reindeer period." Gives the results of investigations of M. Benoist in 1896, — the specimens discussed are now in the Museum of Saint-Germain-en-Laye. Locality, stratigraphy, archeological remains, art, etc., in the "shelter"

Breuil—Continued.

and the cave, are briefly considered. In general character the art-remains of the "station" of St. Marcel resemble more the type of the Pyrenean than of the Perigordian grotto, etc. In the grotto of St. Marcel, paleolithic, neolithic, and Gallo-Roman deposits or strata occur. The objects found in the red clay are discussed in detail. Particularly noteworthy is a pendant with a figure of a horse at full gallop on one side and a scaliform figure on the other. The marks on another look like an inscription (?) A remarkable drawing of a reindeer on schist was found in the yellow clay.

Conwents (Dr.) Ueber die Einführung von Kauri und verwandten Schnecken-schalen als Schmuck in West-preussens Vorgeschichte. (Corr.-Bl. d. deutschen Ges. f. Anthr., München, 1902, XXXIII, 9-10.) Résumé data concerning prehistoric finds of cowries and related shells in West Prussia. Finds of the cowry (*Cypræ annulata* and *C. moneta*), etc., are most common in the stoniest graves of the Hallstatt period (i. e., in the first few centuries B.C.), less numerous in the Roman period (i. e., the first few centuries A.D.), while from the Arab-Norse period but a single specimen is reported. Cowry-ornaments of various sorts were used both for men and horses. The presence of these objects in prehistoric West Prussia is evidence of a system of exchanges (by trade, travelers, or otherwise) between that part of Europe and the Red sea more than 2000 years old. It is worth noting that the Hallstatt period specimens, twelve in number, were all found on the left side of the Vistula, where face-urns abound; those of the Roman period on the right side of the river. Most of the finds in question are now in the Museum at Danzig.

Die Reuthierdoss von Scharnese, West-preussen. (Ibid., 14-16.) Brief account of a vessel of reindeer-horn, with point-and-line ornamentation, and also the incised figure of a reindeer of simple type but cleverly detailed. The specimen was found at Scharnese, West Prussia, and was for some time supposed to be prehistoric. It has since been shown to be in all probability a modern piece of work from Norwegian Lapland.

da Costa Ferreira (A. A.) Sur la capacité des crânes portugais. (L'Anthro-

pologie, Paris, 1902, XIII, 219-220.) The author concludes that there can be distinguished by the size of the cranium two dolichocephalic and two mesocephalic types in the population of Portugal,—to capacity of cranium correspond notable differences in stature and in nasal index. In Minho he sees evidence of a Celtic invasion, in Alentejo of a Semitic factor, in Algarve of a Berber element.

Déchelette (J.) Note sur l'oppidum de Bibracte et les principales stations gauloises contemporaines. (Ibid., 74-83.) Résumé data concerning the oppidum of Bibracte and the chief Gaulish stations contemporary with it. At Mont Beuvray (Bibracte) have been found the oldest specimens of mason-work houses yet discovered in Gaul. Bibracte was an important center of iron fabrication. Bibracte belongs to the third, or most recent, subdivision, of the La Tène period (according to Tschler). The author gives a list of the other stations of this period, dividing them in six geographical groups. M. S. Reinach is of opinion that the invasion of the Cimbri and Teutons occurred between La Tène II and La Tène III, and that, in expectation of, or as a result of these invasions, the Gauls began to mass themselves in fortified places, oppida, like Bibracte, etc. The uniformity of oppidum construction and civilization would thus be explained.

Forrer (Dr.) Neolithische Wohngruben von Achenheim. (Corr.-Bl. d. d. Ges. f. Anthr., München, 1901, XXXIII, 133.) Brief note on the neolithic dwelling-holes and diluvial culture-stratum of Achenheim near Strassburg in connection with photographs of them.

Franko (I.) Galits'ko-Rus'ki narodni pripovidki. (Etnogr. Zbirnik, Lviv, 1901, x, 1-200.) This first part, Abi-Vilati, of a collection of proverbs of the Galician Ruthenians, contains 2926 items under some 545 entries of keywords. The greatest number of items are under *Boz* (God), with 385. Where necessary, free (or literal) explanations of the proverbs are given and reference made to the folk-custom, usage, tale, idea, etc., giving rise to the sayings in question. Some analogical proverbs of other nations are cited. The place where each proverb was collected (or the name of the recorder previous to

Franko—*Continued.*

this work) is given. The dialect is preserved wherever possible and variants indicated. This collection, of which this section is estimated at about $\frac{1}{4}$ or $\frac{1}{2}$, is intended to contain, as far as possible, all published proverbs besides a large number collected orally by Dr Franko and others.

Fuchs (K.) *Der Burzenländer Hof.* (Mitt. d. anthr. Ges. in Wien, 1901, XXXI, 275-296.) Treats, with 28 text-figures, of the farm and its buildings in the Burzen region of Transylvania. The country and its inhabitants, the village arrangement, the farm disposition, enclosures, gates, barns, inns, two-roomed house, one-roomed house, "short houses," "fire houses," etc., are described. The house and farm of this region are essentially "old Saxon," though subject to considerable foreign influence.

— *Ueber das Székler Haus.* (Ibid., 334-339.) General description, with 12 text-figures, of the house of the Székler, the Magyar-speaking inhabitants of the mountain valleys of south-eastern Transylvania. The *Hof*-arrangement here is perhaps Saxon, but the dwelling-house seems to be a corrupt mixture of the Saxon house and the "mountain" house. The most characteristic features of the Székler house, the *erecs* ("vestibule"), and the *teredás* ("passage") are borrowed from the stable.

— *Römanischer Ofen in Zernest.* (Sitzb. d. anthr. Ges. in Wien, 1901, 147-148.) Brief note, with text-illustration.

Ginfrida-Ruggeri (V.) *Appunti di etnografia comparata della Sicilia.* (A. d. Soc. Rom. di Antr. Roma, 1901 [1902], 241-263.) In this article, well provided with bibliographical foot-notes, the author seeks to discuss from the ethnographic point of view the mass of data gathered by Pirie concerning the popular beliefs of the Sicilians of today. In these beliefs we can distinguish the remains of ancient myths, those of ancient superstitions, and those of ancient symbols. Lament myths, witch-superstitions, enchanted treasures, zoological mythology, plant-anthropism, litholatry, love-charms, folk-medicine, number-symbolism (7, 3, 9), fire superstitions, star and sun symbols,

marriage symbols and superstitions are referred to. The author seems to agree with de Gubernatis, that "the basis of beliefs in Italy is still pagan." He attaches great importance to mental associations, not merely as regards symbols but in all the other fields of folk-thought. Psychic survivals have the same value as morphological survivals. Sicily is a good area for the study of such phenomena.

— *Materiale paleontologico di una caverna naturale di Imbello presso Cefalù in Sicilia.* (Ibid., 337-363.) Treats, with 2 plates, of the human remains and relics of human origin in the burial cave of Imbello in Sicily. Pages 339-351 contain descriptions and measurements of 4 nearly complete and 3 fragmentary crania with notes on many portions of crania, long bones, etc. The skulls found belong probably to the "Mediterranean race," although considerable variations in some of the characteristics are indicated. There were found also in this cavern a number of fragments of obsidian knives, etc., 8 uncolored, unornamented vases of clay, some objects and ornaments of stone, animal bones, etc. The ceramic remains suggest those of the cave of Pertosa belonging to first bronze age (2000-1750 B.C.). The lithic objects are "Mediterranean" in aspect and form; with a suggestion here and there of ancient Egyptian. The Imbello remains were discovered in 1891.

Goodrich-Freer (A.) *More folklore from the Hebrides.* (Folk-Lore, London, 1902, XIII, 29-62.) Miscellaneous items, many of which are thought not to have been printed before, concerning dangers and precautions, animal lore, the weather and the church seasons, divination, leechcraft, death and drowning. The things that "it is not right" to do are very numerous.

Gorganović-Kramberger (K.) *Der paläolithische Mensch aus dem Diluvium von Krapina in Kroatien.* (Mitt. d. anthr. Ges. in Wien, 1901, XXXII, 189-216.) In this article, with 4 plates and 18 text-figures, the author gives details of further examination of the diluvial man of Krapina. The bones of the skull, its form, the under-jaw in particular, the teeth, and the other osseous fragments are treated at some length. The author concludes that: In skull formation, supra-orbital ridges,

Gorganović-Kramberger—*Continued.* mastoid process and *para tympanica*, teeth, etc., the man of Krapina possesses the characteristics of the oldest known skulls, and belongs to the province of the *homo neanderthalensis* (in Schwalbe's sense). By reason of hyperbrachycephaly, skull form, and prominent supra-orbital ridges, the man of Krapina belongs to a new race, — *homo neanderthalensis Krapinensis*. In supra-orbital ridges, mastoid process, teeth and lower jaw (partly), the skull exhibits pithecoïd characters.

Haddon (A. C.) A gallery of animal engravings of the stone age. (Nature, London, 1902, LXX, 299-300.) Brief account, with 2 figures, of the recent discoveries of Capitan and Breuil at Combarailles. See *American Anthropologist*, 1902, N. S., IV, 159.

Hertzog (Dr) Die prähistorischen Funde von Egisheim. (Corr.-Bl. d. d. Ges. f. Anthr., München, 1901, XXXII, 126-131.) General account of Egisheim and its human remains, from the discovery in 1865 of the famous skull down to the investigations of Gutmann, 1888-1898, which have thrown new light upon the matter. Both the famous Egisheim skull of 1865 and that found by Gutmann in 1893 are assigned by Schwalbe to the Cro-Magnon race. Four new Stone-age graves have been discovered, the skeletons in which show the people of Egisheim to have been, in part at least, small-statured (even pygmy). In one of the graves a small axe of jadeite was found, the blade of which is "sharp enough to cut with as a sheet of paper." In another grave a fine specimen of neolithic pottery was discovered. In the fourth grave were the dwarf-skeleton and a piece of pottery resembling the one just noted. Northeast of Egisheim many traces of settlement have been found. The so-called "funnel pits" belonging to the neolithic period, and five graves of the bronze age have been examined, from which some interesting objects have been obtained. The Hallstatt period is represented by the remains in the cemetery on the Bühl slope. Other relics are briefly mentioned. Dr Hertzog concludes that the investigations at Egisheim prove that this locality is perhaps the most important prehistoric "station" in Alsace.

Hildebrand (H.) Djurformade spinnor. (K. Vitt. Hist. o. Ant. Ak. Meddel., Stockholm, 1896 [1901], XXV, 132-136.) Brief discussion, with 9 text-figures of fibulae in the shape of animals, from Östergötland, Västergötland, Öland, Schonen, etc. The style is of the viking age, and some of the forms appear on runic monuments of the eleventh century. The protractions and convolutions of the body and limbs of these animals are sometimes remarkable.

— Svenska kyrkans funtar. (Ibid., 137-144.) Nos. 11-18, with 9 text-figures, of brief descriptions of the fonts in Swedish churches.

— Nyfunna målningar. (Ibid., 103-106.) Brief account, with 2 figures, of a Virgin group picture from the Vadstena cloister and another from the Appuna church in Östergötland, more fantastic, representing God and certain animals. These pictures date from the Middle Ages.

Hnatjuk (V.) Galits'ko-Ru'ki narodni legendi. (Etnogr. Zbirnik, Lviv, 1902, XII, xl + 215.) This collection of folktales of the Galician Ruthenians contains 209 tales distributed as follows: Old Testament Biblical legends, 62; New Testament, 93; saint-legends (Greco-Latin and Polish-Ruthenian), 38; legends of witchcraft, sorcery, etc., 16. There are 44 variants, leaving the number of separate tales at 165. Solomon seems to be the favorite Old Testament character, while the New Testament legends naturally center about the Christ. In the legends relating to the saints, St Nicholas is most prominent. One of the longest tales (180-185) is concerned with the Christianizing of the country. To most of the tales comparative bibliographical references are appended.

Hoernes (M.) Thönerne Becherfigur aus der Neumark. (Globus, Braunschweig, 1902, LXXXI, 13-14.) Describes briefly after *Dauver*, with 2 text-figures, a clay figure of the late bronze period from Dechsel in Neumark, which seems related on the one hand to the "*Becher-Ähren*" of various parts of Europe, and on the other to the so-called "*Asarte-idols*" or clay female figures of Asia Minor, etc.

Hubert (H.) Sépulture à char de Nanterre. (L'Anthrop., Paris, 1902, XIII,

Hubert—*Continued*.

66-73.) Treats, with 11 text-figures, of a La Tène ear-burial at Nanterre,—the objects found, chiefly of bronze and iron (parts of ear and harness, weapons, etc.), are now in the St Germain Museum. Among the most interesting specimens are some enameled rings, etc.

Imbert (M.) L'archéologie à l'exposition de 1900. (Bull. Soc. de Recherches, 1901-1902, XI, 50-54, 57-60, 99-103, 120-132.) Treats of the exhibits illustrating the Merovingian period, Gallic objects of bronze, iron, etc., objects from the Gallo-Roman cemetery of Vermand. The author believes that "a large part of Merovingian decoration is symbolical, and its symbolism reveals the influence of the Roman clergy."

Jankó (J.) Les types magyars. (L'Anthropologie, Paris, 1902, XIII, 221.) Brief reference to Dr. Jankó's album of Magyar types recently published, an account of which was given the Congress of Prehistoric Anthropology and Archaeology of 1900.

Kaindl (R. F.) Neuere Arbeiten zur Volkskunde und Ethnographie der Rumänen. (Globus, Braunschwg., 1902, LXXXI, 102-105.) Resumes recent studies of Réthy, Hasdeu, Dan, etc., on the origin of the Roumanians and of Gorovei (editor of the Journal *Scriturile*), Demasiannu, Marian, Sevastos, Laner, Milkowicz, Kaindl, Strauss, etc., on Roumanian folklore and folk-literature. Réthy, in 1896, sought to show that the basis of the Roumanian vocabulary was Italian, though the people is rather Albanian or Slavonic. Hasdeu attributes the origin of the Roumanian language to a rather undisturbed development of the Daco-Latin dialect of the Carpathian region. Demasiannu has pointed out many parallels between Roumanian folklore and ancient Roman ritual and religious customs. Marian and Sevastos have studied Roumanian wedding customs. Laner has published a collection of proverbs. There has been great scientific and literary activity in Roumania the last ten years, stimulated in part by the prizes offered by the Academy,—in 1901 a prize of 5000 francs was offered for a comparative study of the Roumanian dialect.

Kallas (O.) Übersicht über das sammeln estnischer runen. (Fins.-ugr. Forsch., Helsingfors, 1902, II, 8-21.) An interesting account of the progress made in the collections of Estonian "runes," or folk-songs, since the first systematic attempt in the early years of the nineteenth century,—the first appearance of a "rune" in print, however, dates back to pastor Ch. Kelch's *Dieftindische Historia*, published in 1692. The impulse given by Herder, the German philosopher-poet, had much to do with the serious collection of Estonian folk-songs. The labors of Hupel (d. 1810), C. H. J. Schlegel (d. 1842), J. H. Rosenplanter and colleagues, Knüpfer (d. 1843), Peterson, Fählmann (d. 1850) and colleagues, Kreutzwald (d. 1882) and colleagues, Neus (d. 1876) and colleagues, Hurt (b. 1830), Veske (d. 1890), Eisen (b. 1856) are resumed, and the work of the various literary and scientific societies—*Gelehrte Estnische Gesellschaft*, *Estländische Litterarische Gesellschaft*, etc., are noted in brief. The appeal of Hurt published in the Estonian papers in 1884 has been richly productive, especially on the part of school-teachers and educated farmers' sons, who have taken a deep interest in the matter. The harvest gathered by Eisen is even greater than that of Hurt. The songs, *Märchen*, *Sagen*, local legends and traditions, riddles, proverbs, "charms," jokes, games, items of folk-medicine, superstition, folklore, etc., recorded now number their tens of thousands.—Eisen's collection of songs, e. g., amounted in 1902 to 11,419, Hurt's in 1896 to 40,500.

Keune (Dr.) Die Erforschung des Briquetagegebietes. (Corr.-Bl. d. d. Ges. f. Anthr., München, 1901, XXXIII, 119-125.) Brief general discussion of the "briquetage" question. See *American Anthropologist*, 1902, N. S., IV, 162.

— Gallo-römische Grabfelder in den Nordvogesen. (Ibid., 143-146.) Brief account, with many bibliographical notes, of Gallo-Roman cemeteries in the North Voges country,—Dreibüllgen, Neuschauer wood, etc. These localities are important for the study of this mixed culture.

Kraitschek (G.) Die anthropologischen Verhältnisse Italiens. (Ztschr. f. Schulgeogr., Berlin, 1901, XXIII, 137-145.) General anthropological and ethno-

Kraitschek—Continued.

graphic résumé. Treats of stature, color, cephalic indices, race characteristics, history, etc.

Krebs (W.) Geologische und meteorologische Motive einiger an Thüringer Seen geknüpften Sagen. (*Globus*, Braunschwg., 1902, LXXXI, 63.) The author argues that certain legends of devils and evil spirits connected with the lakes of Thuringia are due to geological and meteorological *motifs*, land-slides, sinkings, etc. The demons are personifications of geological forces.

Krohn (K.) Dem andenken Elias Lönnrot's. (Finn.-ugr. Forsch., Helsingfors, 1902, II, 1-7.) Brief biographical sketch of Lönnrot, the Kalevala scholar (d. 1884), to whom belongs the first great place in the literature of the Finnish epic.

Kunz (G. F.) Découverte d'un grand bloc de néphrite à Jordansmühl en Silésie. (*L'Anthrop.*, Paris, 1902, XIII, 194-196.) Brief account of the discovery, in a serpentine quarry at Jordansmühl, Silesia, by the author and Professor Hünke, of a large compact block of nephrite, which "weighs more than all the jadeite or nephrite implements in all European collections."

Laville (A.) Cinq mètres de dépôts modernes stratifiés au barrage d'Alfort. (*Ibid.*, 191-193.) Brief description, with cut, of a stratified deposit, five meters thick, of modern age, in an inlet of the river Seine below the Barrage d'Alfort. These strata contain fragments of Roman amphorae, pottery of the XV-XVI centuries, planks with nails, cattle bones, etc. The second layer of the deposit is post-Roman, the eighth and last, of the XIX century. These five meters of deposit have taken at the most four centuries to form.

Lehmann-Filbés (M.) Gräbngelraub im isländischen Altertum. (*Globus*, Braunschwg., 1902, LXXXI, 64-66.) Translates, from the "Hardar saga," which deals with events of the tenth century, A.D., the account of the plundering of a viking grave. To the things (arms, ornaments, etc.) found in graves peculiar virtues were attached. These practices account in part for the scarcity of objects of this sort in Icelandic graves.

Manouvrier (L.) Sur le T sinépal.

(*L'Anthrop.*, Paris, 1902, XIII, 207-208.) In this brief note the author cites as the most probable theories to account for this prehistoric mutilation (Dr Manouvrier has observed six cases), repeated lesions of this sort produced by some sort of head-dress, and the application of iron points to the head for therapeutic reasons. The four dolmens from which crania with this sinépal T have come are all situated in a limited region of the department of Seine-et-Oise.

Marquet (Dr) La vie communale à Rochechouart, d'après les Registres Consulaires et les Livres de la Municipalité. (*Bull. Soc. de Rochechouart*, 1901-1902, 10-16, 67-74, 86-91, 118-126, 146-153.) Treats of the social phenomena of the commune of Rochechouart in 1792-1793.

— Une visite au Comfoulenta. (*Ibid.*, 25-26.) Notes ruins of châteaux, churches, etc. On page 31 the dolmen known as the "pierre de Sainte-Marquerite," on an island in a branch of the Vienne, is briefly referred to.

Masfrand (A.) Compte rendu des fouilles faites dans les ruines gallo-romaines de Chassenon. (*Ibid.*, 1-6.) Concluding section. Many interesting specimens of Gallo-Roman (or earlier) pottery were found. Also some burials (with skeletons) of the fifth and sixth centuries, A.D. The graves as a rule contained nothing but the corpse.

— Quelques notes sur les origines de la nationalité française. (*Ibid.*, 67-66, 103-108, 126-129, 154-157.) Treats of Tertiary man, the race of Cro-Magnon, the Aryan invasion, mégaliths, distribution of the Gallic peoples of France, character and manners of the Gauls, the Roman conquest. To be continued.

Mehlis (C.) Das neolithische Grabfeld von Flomborn in Rheinbessen und the Hockerfrage. (*Intern. Cbl. f. Anthr.*, Stuttgart, 1902, VII, 65-70.) General discussion of the knee-elbow burial (Hockerlage) in connection with the Flomborn graves of the neolithic age, which contained five "sitting" and, in the lower layers, two lying skeletons, representing in all probability two different "races." The sitting-burial represents an intrusion of the "Mediterranean race" from the south (Ligurian-Libyan), a view which the nature

Mehlis—*Continued.*

of the pottery found and its ornamentation seem to confirm, according to Dr Mehli. An ethnological relation between the Nile and the Rhine is suggested, he thinks, by the facts in question.

Mikkola (J. J.) Finnisch-slavische Beziehungen. (Finn.-ugr. Forsch., Helsingfors, 1902, II, 72-76.) This brief article on "Finnic-Slavic relations" treats of old traces of the Karelians, a Finnish loanword in Slavonic (Polish *Kobieta*, "woman" = Finnish *Kuusi*), a Slavonic loanword in Finnish (Finnish *tuika*, "keel" = Slavonic * *doika*), the word *Ruuti* (Russ), the *Wepes* and *Volegda* (names of peoples of Finnish stock).

— Neuchnals kbujiga, kõnyv und kunov. (Ibid., 77-78.) Discusses the etymology of Mordwin *kõnyv*, "paper," Hungarian *könyv*, "book," which the author considers an ancient loanword from some foreign source.

Namnlängden i almanacken. (K. Vitt. Hist. o. Ant. Ak., Stockholm, 1900 [1901], XXIX, 132-135.) A symposium by H. Hildebrand, H. Schöck, R. Törnebladh, and E. Hildebrand on the variations of the saints' names in the calendar.

Nordenskiöld (E.) Bensättning från stenåldersboplatz på Gotland, insamlad af folkhögskole-foreställdaren Hans Hansson. (Ibid., XXIX, 66-68.) Brief account of human and animal bones from a station of the Stone age in Gotland.

Nordlander (J.) Med preposition sammansatta ordnamn. (Ibid., 1896 [1901], XXV, 88-97.) Discusses Scandinavian place-names compounded with prefixes and prepositions (nordan, summan, östan, västan, öfvan, nedan, under, utan, innan, för, vid; at, i, etc.).

Packard (A. S.) An afternoon at Chelles and the earliest evidence of human industry in France. (Pop. Sci. Mo., N. Y., 1902, LXI, 81-88.) General account of geological strata and human remains, implements, fossils, etc., with two text-figures. Ameghino's study of the Chelles deposits is referred to. Dr Packard concludes: "We may, then, provisionally at least, venture to suppose that the human descendants of the Java ape-man shared in this great wave

of migration of tropical beasts, birds, insects, shells, etc., which at the end of the Pliocene, or the beginning of the Quaternary, passed by way of Asia Minor and Greece into Europe, and peopled the plain and roamed through the forest lands of western Europe." The author does not believe in European Tertiary man.

Pittard (E.) Étude de 30 crânes Roumains provenant de la Dobroddja. (Rev. de l'Éc. d'Anth. de Paris, 1902, XII, 20-22.) Gives results of study of 30 Roumanian skulls from the monastery of Cocots (dating from the beginning of the nineteenth century),—the monks are said to have come from Transylvania and the Danubian provinces. The series is not at all homogeneous and the cephalic indices suggest the presence of a dolichocephalic (or sub-d.) and a brachycephalic (or sub-b.) people,—the author thinks that the former element may represent the Getes. The brachycephals are, however, much in the majority. The Roumanian skull is leptoprosopic and mesorrhine. In matter of curvature the frontal segment seems to be less developed than the parietal, but the total occipital segment is well developed. By curvature they belong to the series of large skulls. This paper adds to the small stock of data on Roumanian craniology.

— Contribution à l'étude anthropologique des Taiganes turcomans. (Ibid., 477-485.) Gives results of measurements (height, head, face, nose, ear, eye, mouth, color of hair and eyes, etc.) of 62 "Turkoman Gypsies" from the Dobroddja, and comparisons with the measurements of Roumanian Gypsies.

Précigou (A.) Exploitation des gisements stannifères du Limousin durant l'âge du bronze. (Bull. Soc. de Recherches archéol., 1901-1902, XI, 36-40, 76-80, 81-86.) The author concludes that the primitive tin-miners of the region of Limoges were "pre-Celtic,"—a people subjected at the close of the Bronze age by the iron-using Gallic invaders. All available evidence is resumed.

Recsey (V.) Fouilles dans un cimetière préhistorique à Bakony, Hongrie. (L'Anthropologie, Paris, 1902, XIII, 61.) Brief note on the finds (stone tombs with clay urns containing human

Kersey—Continued.

bones; bronze ornaments, etc.) from Bakony, Hungary, now in the museum of Pannonthalms.

Reinach (S.) *La Crète avant l'histoire et les fouilles de M. A. Evans à Cnosse*. (Ibid., 1-39.) A critical résumé, chiefly after the explorations of Evans, of the prehistoric archeology of Crete, with 31 text-figures, including a map. After a brief account of the other investigations the "English period" (1893-1901) of archeological exploration in Crete is considered in detail and the results estimated. M. Reinach concludes that "The excavations of Evans are a capital event in the history of archeology. They reveal to us a civilization richer and more advanced than that with which the discoveries of Schliemann made us acquainted. They give the death-blow to all theories attributing to the Phenicians a preponderating part in the very ancient civilizations of the archipelago, but hardly settle definitely the problem of Mycenaean origins."

— *La bataille d'Alia*. (Bull. Soc. de Rochedouart, 1901-1902, xi, 16-19.) In this last section the author concludes that the name "battle of Alia" is a misnomer. The account of Diodorus is to be preferred to that of Livy. Archeological evidence confirms this view.

Reinecke (P.) *Die La Tène-Funde vom Gräberfeld von Reichenhall*. (Mitt. d. anthr. Ges. in Wien, 1901, xxxi, 340-344.) Discusses, with one text-illustration, the non-Merovingian objects discovered in the graves at Reichenhall. Some of the iron and bronze remains, fragments of pottery, etc., are evidently to be ascribed to earlier graves of the La Tène epoch, situated in the same area.

Rivière (E.) *Les figurations préhistoriques de la grotte de La Vache, Dordogne*. (C.-R. Acad. d. Sci., Paris, 1902, cxxxv, 265-268.) Compares briefly (with 2 text-figures) the prehistoric paintings of the cavern of La Vache with those of the grotto of Font-de-Gaume. The latter are "real frescoes," the former are not. The question of the contemporaneity of the drawings in the two caves is not yet settled,—those of La Vache are, however, paleolithic (Magdalenian). The

figures reproduced represent a reindeer and a horse.

Rozhdetsvenski (A. N.) *K' antropologii belorussov Slutskago uезда Minskoi gub.* (Russk. Antrop. Zhurn., Moskva, 1902, iii, No. 1, 49-57.) This article, which consists chiefly of tables, gives the anthropometric data concerning 150 white Russians (men 59, women 57; girls 17, boys 17) from the district of Slutsk in the Government of Minsk. The prevailing head-form is brachycephalic, of face leptoproscopic. The average stature of the men was 1648 mm. (range 1529-1730) and of the women 1539 (range 1386-1658); and the cephalic indices 81.50 (range 74.58-89.53) and 82.27 (range 76.30-87.86) respectively.

de Saint-Venant (J.) *Antiques enceintes fortifiées du midi de la France*. (L'Anthrop., Paris, 1902, xiii, 84-86.) Discusses in general terms ancient fortified enclosures in various parts of southern France, particularly in the central and northeastern sections of the department of Gard,—of these the author has examined fourteen. From several of them flint and other implements have been taken; four present numerous evidences of the Roman period. Others yield classic La Tène types of instruments and ornaments. Many have furnished very old specimens of ceramic art, others pottery of ordinary Celtic type. Twin-walls also occur. The author attributes these enclosures (the smaller are *castella*, the larger *oppida*) to the Arcomic Volci.

Salin (E.) *Ett järnåldersfynd från Uppland*. (K. Vitt. Hist. o. Ant. Ak. Meddel., Stockholm, 1896 [1901], xxv, 28-47.) Describes, with 32 text-figures, the find (the specimens have been in the Stockholm Museum since their discovery) of the Iron age made in a grave at Tihle, in the parish of Lidsena, Uppland. Some of the objects suggest similar specimens from Fünen and Schleswig, and the author inclines to explain their presence by a migration of South Germanic tribes to certain parts of Sweden.

Savoye (C.) *Monuments mégalithiques du département de Saône-et-Loire*. (Bull. Soc. de Rochedouart, 1901-1902, 47-50.) Brief account of the dolmens of Decize and the "rocking stones" of Suin, Uchon, Dettay, and the "Pierro

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Folle" of Bailly. One of the stones of Dotty is called the "bouquet du diable."

— Le cimetière gallo-romain de St-Amand, Saône-et-Loire. (Ibid., 74-76, 108-110.) Altogether 16 stone-tombs were discovered from 1874 down to the present. The one examined by the author in 1889 contained two skeletons. The humerus of one had an olecranon perforation. The heads had been removed after the bodies were inhumed. What appear to be neolithic flints were discovered in some of the graves.

Schmidt (E.) Der diluviale Mensch in Kroatien. (Globus, Braunschwg., 1902, LXXXI, 48-49.) Brief account of the discoveries of "diluvial man" in the grotto of Krapinica in Croatia, 1895-1900, after the description of Krausberger. The remains indicate a very low culture and cannibal feasts are suggested by the condition of some of them. The human type approximates that of the Neanderthal.

— (G.) *Die, der oder das Kalevala?* (Anz. d. Finn.-ugr. Forsch., Helsinki, 1902, II, 48-51.) Discusses the gender of the word *Kalevala* (name of the great Finnish epic) in German and decides for neuter. The prevailing gender at present is feminine.

— (V.) Les dernières découvertes archéologiques faites en Danemark et dans ses possessions arctiques. Poteries préhistoriques avec cérames incrustées découvertes par M. Sarauw. (L'Anthropologie, Paris, 1902, XIII, 62-65.) Brief references to the excavations in the old Scandinavian settlements in Iceland and Greenland by Captain Brown under the auspices of the National Museum of Copenhagen, and by Sarauw in Jutland, etc. The most important result of the last is the discovery of imprints and incrustations of cereals (wheat and barley) on prehistoric pottery. Sarauw is also studying the ancient ceramic art of the Scandinavian countries.

Sernander (R.) Om fyndet af ett lerkärl i Vivelata-mossen, Markims socken, Uppland. (K. Vitt. Hist. o. Ant. Ak., Stockholm, 1900 [1901], 38-40.) Gives list of plants found in a peat-bog in the parish of Markim in Uppland, also some fragments of pottery discovered about a meter below the surface, which resemble pottery found

in the Uppland graves of the first few centuries A.D. Fragments of cereals were also found. The author inclines to regard the find as the result of a votive-offering, made when the bog was still a shallow lake.

Setälä (E. N.) Beiträge zur finnisch-ugrischen Wortkunde. (Finn.-ugr. Forsch., Helsinki, 1902, II, 78-80.) Identifies the Lapp *duogai* "to knit," with Mordwin *avudoms* "to cover."

Smiljanic (M. V.) Die Spuren der Raut- und Kaufehe bei den Serben. (Int. Arch. f. Ethn., Leiden, 1902, XV, 41-53.) Brief account of relics of marriage by capture and purchase among the Serbians, with whom "in the XV-XIX centuries there was no obstacle to the preservation and continuance of the old patriarchal life of the Balkan peoples." The first clear notices of the capture of brides in Serbian literature dates from the fourteenth century. In the laws of the emperor Dušan. For 200 years after this little is heard of maiden-stealing, but in the sixteenth and seventeenth centuries it is more common than ever, and in the first half of the nineteenth century it was more in vogue still. The author remembers two rapt in his own childhood, in 1878 and in 1879. He suggests that the "capture" with the consent of the bride may have had an origin quite independent from that of her forcible abduction. Marriage by purchase does not seem to have been deeply rooted among the Serbians, when they settled their present habitat. The earliest mention of it occurs in the folksongs of the fourteenth century, — it is rudimentary in the fifteenth to the eighteenth centuries, but many references to it occur in the nineteenth. It seems to have been best preserved in southern Dalmatia.

Šuchevic (V.) Hatzul'schina. (Mater. Ukr.-Ros'k. Ethnol., Lviv, 1901, IV, 145-320; 1902, V, 1-226.) The second part of Professor Šuchevic's monograph on the Huzules, which is illustrated with 2 plates and 144 text-figures, treats in detail of the various outdoor and domestic occupations and industries of this people. The third part, with 21 text-figures, treats of birth (1-10), festivities and merrymaking (11-68), musical instruments (69-77), dances (78-80), songs (81-240), death

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and burial (221-255). In the section on songs the texts of 360 songs of one sort or another are given, and on pages 83-110 the music of a number of them. In the section on festivities also the texts of many songs are recorded.

Tedeschi (E. E.) *Crani Romani moderni. Saggio di una craniologia senza numeri.* (A. d. Soc. Rom. di Antr., Roma, 1901 [1902], 297-336.) In this article, with 22 text-figures, the author describes in detail, after the method of Sergi, 50 modern Roman skulls.—ellipsoid 15, ovoid 11, pentagonoid 5, platycephalic 1, sphenoid 12, cuboid 3, spheroid 1, beloid 2. The dominant types in ancient and modern Rome seem to be the ellipsoid, ovoid and pentagonoid. Much mixture is proved for ancient Rome. Outside of Latium and beyond Italy the Roman anthropological type never became dominant, only its language and its culture.

Telles (S.) *La dégénérescence des races humaines.* (L'Anthropologie, Paris, 1902, XIII, 241-242.) Résumé of a study of the Portuguese race in Africa, published in full by the author. In the third generation, Dr Telles notes: brachycephaly, disharmony of cranium and face, more accentuated lumbar curvature, irregularities of growth, upper alveolar prognathism, shortened and higher calvars, somewhat flatter feet, etc. Some of these features, however, may be otherwise explained than as degeneration stigmata.

Thomas (C.) *Die Alteburg auf der Kuppe des Reuschberges bei Schölkrippen.* (Corr.-Bl. d. deutschen Ges. f. Antr., München, 1902, XXXIII, 1-4.) Brief account, with cut, of a small oval enclosure of earth and sandstone. Tradition credits it with having been the abode of robber knights. The Reuschberg itself seems covered with remains of ancient dwellings or settlements.

Vitali (V.) *Gli Abruzzesi.* (A. d. Soc. Rom. di Antr., Roma, 1901 [1902], VIII, 214-239.) A brief anthropological-pedagogical study of Abruzzese school-boys between 11 and 20 years of age. The first part gives the anthropometric data (stature, width of shoulders, chest-girth, lung capacity, height sitting, finger-reach, cranial and facial measurements). The second treats of morals, character, intellect, intellectual

education, school and family. As compared with the school-boys of the Romagna previously studied by the same author the Abruzzese are rather shorter, the proportions of limbs and trunk are "more esthetic," the excess of finger-reach over stature less. They also lack the lively imagination and sense of association possessed by the former. In Abruzzo, too, intellect of the auditive type (orators, musicians, linguists) seems to prevail.

Vogt (F.) *Deutsche Monatsnamen in Schlesien.* (Mit. d. Schles. Ges. f. Volksk., Breslau, 1902, IX, 1-3.) Gives the German folk-names of the months of the year as used in Silesia, with the proverbs connected with some of them.

Volkov (T.) *L'industrie prémycéénienne dans les stations néolithiques de l'Ukraine.* (L'Anthropologie, Paris, 1902, XIII, 57-60.) Résumé of results of numerous investigations at Tripillyé, Kolodysté, etc., in the Government of Kiev by Khvoika, Bielatchevski, Domantiski and others. The ceramic remains, figurines, etc., discovered by Khvoika and Bielatchevski are referred to in particular.

Vorgeschichtliche Stammeskunde Schlesiens. (Globus, Braunschwg., 1902, LXXXI, 93-94.) Brief résumé of Professor Koschinn's researches soon to appear in extended form. These deal with the peoples and ethnic groups of the Teutonic land in prehistoric times. As early as the Stone age there appears a Nordic (Teutonic) cultrate-area (Scandinavia, Denmark, N. W. Germany, and Holland) and across the Saale a Saxon-Thuringian (coincident with the Bohemian) provincial culture-area. In the Stone age Silesia had no relations with this North Teutonic area. In the Bronze age five culture-areas can be distinguished: Nordic-Germanic, West German (South Hannover and Hesse-Nassau), Thuringian-Bohemian, East German (Posen, Silesia, Saxony, etc.), West and East Prussian. The fourth area consists of two parts, of which the eastern includes only Posen and Silesia. Silesia has seen, in succession, a very thin primitive population, a people akin to the Dacians, East-Teutons, "Scythians," Vandals, Silingi, etc.

Voss (A.) *Prähistorischer Karte und alte Schifstypen.* (Corr.-Bl. d. d. Ges.

Voss—Continued.

I. Anthr., München, 1901, XXXIII, 139-140.) In connection with the investigation of old boat-types Dr Voss notes that the "dug-out" is still in use in certain regions in Europe, e. g. in Albania, where they are coupled together for transporting large objects. This would explain the condition of some prehistoric "dug-outs," those of Offenburg and others. Inflated skins for crossing rivers are occasionally employed in Albania today.

— "Briquetage gefunde (?) " bei Halle a. S. (Ibid., 140.) Brief note on a find of what may be *briquetage* fragments near Halle.

Vram (U. G.) Crani swizzeri. (A. d. Soc. Rom. di Antr., Roma, 1901 [1902], VIII, 195-213.) Gives results of study by Sergi's method of 28 (more than half male) crania from various parts of Switzerland,—cranial, facial, nasal, orbital, palatal, and mandibular measurements are given on pages 207-213, with descriptions. The older types of skull are the ellipsoid, ovoid, pentagonoid, and rhomboid; the apenoid, spheroid, and platycephalic types appear later and become prevalent only in the more recent epochs. Of the 28 crania in question 21 are brachycephalic, 6 mesocephalic, and 1 dolichocephalic. The cranial capacity ranges from 1380 to 1600 ccm. for males and from 1230 to 1420 for females.

Vukasovic (V.) Premières traces d'observations préhistoriques chez les Slaves méridionaux aux XVII^e et XVIII^e siècles. (L'Anthrop., Paris, 1902, XIII, 183-192.) Cites from Vincenzo Prodi (d. 1655), Antonio Caramaneo, G. Salečić, Nicolò Otinich, M. Orbinio and other writers of the seventeenth and eighteenth centuries concerning prehistoric man in the region of the Southern Slavs. Also the anthropological data about three crania from Villa in Bosnia, and notes on other prehistoric objects, chiefly neolithic, including Greek inscription.

Waldeyer (A.) Das Gehirn des Mörders Bobbe. (Corr.-Bl. d. d. Ges. f. Anthr., München, 1901, XXXIII, 140-141.) Brief description of the skull and brain of the murderer Bobbe, examined by Dr Waldeyer. Except that it was relatively large and thin-walled, the skull offered no peculiar characteristics. The

brain (fresh) weighed 1510 gr., which, for a body-weight of something over 100 lbs., was very respectable. Allowing for blood, a weight of 1400 gr. is left, still above the average for such a body-weight. The convolutions possess no marked features. Altogether the brain of this criminal is typically normal.

Weinberg (P.) Estl: Anthropologitscheski otcherk'. (Russk. Antr. Zhur., Moskva, 1902, II, Nos. 3-4, 1-46.) To this excellent general anthropological sketch of the Estonians, which is illustrated with 12 text-figures, is appended a bibliography (pp. 44-46) of some 130 titles. The first section (pp. 1-17) treats of the prehistoric period and the Finno-Ugric origins of the Estonians; the second (17-33) of their physical characteristics (craniology, facial types, color of skin, hair, form of pelvis, etc.); the third (33-50) is devoted to the "comparative anthropological characteristics of the Estonian stock"; and the last (40-43) treats of "the psycho-physical type of the Estonians." Distinct ethnographic delimitations of Estonians, Letts, and Livonians begin with the eighth century A.D. The age of Bronze and the Iron age of La Tène do not seem to be represented among the Estonians. The author, who in 1896 published a special study of the Estonian brain, has resumed in his article practically the entire anthropological literature concerning this interesting people.

Weise (O.) Züge antiker Kultur im heutigen Italien. (Ztsch. f. d. Gymnasialw., Berlin, 1902, LVI, 481-493.) Treats of traits of ancient culture in modern Italy. Disposition of the town, structure of houses, food, clothing, care of the body, plays and games, music, agriculture, religion, death and burial, folk-character, etc., are discussed. As of old, the towns on the rocky heights rule the flat lands below; the nobility is still urban, not feudal. Social life is still more in the *piazza* than in the house. Stories are unknown even now in the greatest part of Italy. The same sort of *frutta da siare* feed the people today, as they did in the age of the Caesars. Bread, fruit, and oil are the other stand-bys. Sandals are still often to be met with. The bath is now in the bath-room (as formerly) not in the sea or the river. The

Weise—Continued.

game of *bellum* and the children's plays on the streets and in the squares are of ancient type. The rhapsodies of old are still to be heard. To Pappus corresponds Pantelone. The plow in use is quite ancient Roman and the horse is but seldom put to it. The goad, not the whip, is employed. Superstition, especially in relation to children, preserves many ancient traits. The Catholic church has continued numerous old customs and usages, sacrifices, processions, etc. In many ways the worship of the Virgin is but a refinement of the old Venus cult. The realistic representation of the departed on their grave monuments is still retained. The folk-character of the modern Italians is much the same as in old Roman times.

Welter (J.) Ueber Terrassenanlagen und Steinwälle in den Vogesenberge. (Corr. Bl. d. d. Ges. f. Anthr., München, 1901, xxxiii, 742.) Brief general discussion of the terraces and stone embankments of the Voeges country. The author considers that these constructions are not fortifications and camp-enclosures, but are related to the life of a peaceful and agricultural people. These stone walls are the ancestors of our garden-walls and hedges (cf. the North-German *Heide*).

Wiklund (K. B.) Zur geschichte des utlappischen *a* und *ä* in unbetonter silbe. (Finn.-ugr. Forsch., Helsingfors, 1902, II, 41-71.) The second section of a detailed study of the history of the primitive Lapp sounds *a* and *ä* in unaccented syllables. A valuable essay in the phonetics of the Lapp language.

Weldrich (J. N.) Zur Frage über das Alter der auf den italischen Inseln vorgefundenen fossilen Tierreste und menschlichen Artefacte. (Sitzb. d. anthr. Ges. in Wien, 1901, 130-131.) Résumé Regalla's article noticed in the *American Anthropologist*, 1901, N.S., III, 777.

Wright (G. F.) The oldest civilization of Greece. (Rev. of Proc. Washington, D. C., 1900, I, 195-204.) Based upon Hall's *The Oldest Civilization of Greece* (London, 1901). Of the 15 illustrations: 5 are from photographs by Dr Wright, 2 from Perrot-Chipiez, and 6 from Hall. Dr Wright concludes that

the prehistoric civilization of ancient Greece "was, in the main, peculiar to itself and independent even of the great Aryan migration which came in both from the north and from the south."

ASIA

Adler (B.) Die Bogen Nomaden. (Int. Arch. f. Ethn., Leiden, 1902, XV, 1-27.) Treats, with 6 plates, numerous bibliographical references; the bows of northern Asia. The use and disuse of the bow, its ethnographic importance, the general character of the north Asiatic bow, material, bow-stick and string, weight and size, ornamentation, simple, strengthened and composite bows, geographical distribution, etc., are discussed. In spite of local variations and ethnographic diversities the north Asiatic bow is fundamentally the same everywhere. The home of this bow was somewhere in the northeast Asiatic and northwest American region. If the composite bow originated in the north, it must have been perfected in the south, but with the resignation of peoples to the north became again simpler and not so strong. The forms of the bow in the neighborhood of Bering strait point to the fact that "immigrations from the New World into the Old have occurred, and consequently in this region blood-relationship of peoples in both hemispheres exist." In northern Asia the rôle of the bow is a subordinate one, and, like the arrow, is in danger of disappearing altogether,—the "Russian peace" is in part responsible for this. In some parts of Siberia the bow has become a children's plaything. Often where it has been superseded in the hunt (e. g. among the Jungas, Ostiaks) the bow is honored in target-shooting, the bear-festival, etc. It is a curious fact that while in northern Asia the children's arrow is always more finely and prettily wrought and adorned, the children's bow remains simple and rude. The use of the bow in religious and other ceremonies has been but little studied. The musical bow and the fire-bow are known in the north Asiatic region, the former, however, not in a pure type. The Chinese bow is considered with some detail on pages 6-8. Very important, as influencing the bows of neighboring peoples, is the composite bow of the Turks; which has been spread by the Arabs in

Adler—Continued.

North Africa and in the Malay archipelago. This paper should be read in connection with the author's larger study of the north Asiatic arrow. See *American Anthropologist*, 1902, N. S., IV, 337.

— Pfeifende Pfeile und Pfeilspitzen in Sibirien. (Globus, Braunsch., 1902, LXXXI, 94-96.) Brief account, with 5 text-figures, of "whistling" arrows and arrow-heads from Siberian peoples (Japanese, Buryats, Ostiak, Chukchi). These noise-making arrows seem to have once had a much greater vogue. Where the gun has made its appearance the rôle of the arrow declines, and it continues chiefly with tribes poor in culture or as a child's weapon. The Chukchi children use a "whistling" arrow figured here. Noise-making arrows occur also outside Eurasia, among the Suya of Brazil, e. g., but according to Dr Adler none has been found in North Australia, Africa, or North America.

Aristov (N. A.) Etnicheskiya otnosheniya na Pamir, etc. (Russk. Antr. Zhur., Moskva, 1901, II, Nos. 3-4, 109-184; 1902, III, No. 1, 30-48.) In the first of these continuations of his ethnographic sketch of the Pamir region according to ancient (chiefly Chinese) historical documents, the author treats of the travels of Hsien-Tsang, and of the ethnic history of the peoples to the south of Pamir on the southern slopes of the Hindu Kush and the Mustagh. The second résumés anthropological opinion concerning some of the Pamirian peoples and gives some anthropometric data about the Ladakhi, Galchas, Chins (Dards), Yashkuna, Kalirs, Chitrals, etc. (167 individuals in all, of whom 83 were Galchas and 43 Chins), gathered from various sources.

Aspelin (S. R.) Castrén's Aufzeichnungen über die Altertümer im Kreise Minusinsk. (Finska forn. Tidskr., Helsingfors, 1901, XXI, No. 1: 1-34.) The notes of Castrén here published in German give the details of his Atchinsk-Minusinsk journey of 1847, with particular descriptions of the steppe-graves examined by him. They were given for publication to the Finnish Antiquarian Society by the relatives of Castrén.

Bälz (E.) Ueber die Rasselemente in Ostasien, speziell in Japan. (Mitt. d.

d. Ges. f. Natur-u. Völkerkunde Ostasiens, Tokio, 1901, VIII, T. 2, 227-235.) Treats practically of the same topics as the article noticed in the *American Anthropologist*, 1902, N. S., IV, 171.

Behrens (Dr) Der Kannibalismus der Chinesen. (Globus, Braunsch., 1902, LXXXI, 96-97.) Cites from de Groot's *The Religious System of China* (1901) evidence of the prevalence of cannibalism among the Chinese,—the use of parts of the human body (liver, heart, gall, blood, secretæ, and excreta) as ingredients in medicine is noted. Cannibalism in China, as elsewhere, has also resulted from hunger, superstition, epicurism, hatred and revenge (often tyrants and rebels have been eaten by mobs).

Camus (L.) Recherches expérimentales sur le poison des Moïs. (Rev. de l'Éc. d'Anthr. de Paris, 1902, XII, 119-146.) Detailed account, with 31 figures (chiefly curve-tracings) of the cardiac action (the subjects were frogs, rabbits, dogs) of the arrow-poison of the Moïs. The bamboo-tube containing the poison was obtained by M. d'Enjoy from a Moï of the northern Dong-Nai river near the lower Laos country. A brief account of previously examined specimens is given. The author concludes that the Moï arrow-poison is in question is a cardiac toxic substance, with evident systolic action.

Delisle (F.) Les fouilles de M. J. de Morgan à Susse. (L'Anthrop., Paris, 1902, XIII, 487-495.) Resumes the discoveries of Morgan in ancient Susiana and their significance for Elamite or Chaldeo-Elamite civilization. The Stone period reveals the presence of obsidian (of foreign origin) as well as flint. The pottery varies both in fabrication and in decoration. Some ivory and bone plates discovered have on them drawings of feline, horses, etc., of quite a Magdalenian genre. Of interest also are the stone objects,—*andolurus*, obelisks, vases, heads of clubs and canes, etc. There are also statuettes and model-figures of animals, etc., bas-reliefs of various sorts. The bronze industry is well represented (votive columns, fragments, altars, and the like, with long inscriptions) and Elamite bronze-culture seems to have been *in genere*. The monuments of the historical period are numerous and valuable. The culture of the Stone

Dejale—Continued.

age in this reign had a long duration. Evidences of an ethnic dualism appear, one people Semitic, the other Anzanite of uncertain affinities. The negro theory is still unsupported by proper evidence.

van Gannep (A.) Les "wasm" ou marques de propriété des Arabes. (Int. Arch. Ethnogr., Leiden, 1902, xv, 85-98.) Detailed discussion of "property marks" among the Arabs, with 7 text-figures and 4 tables of marks from various authors,—also brief *questionnaire*. The *wasm* constitute a sort of rudimentary heraldic vocabulary. See *American Anthropologist*, 1902, N. S., IV, 172.

Gray (L. H.) The Hindu romance. (Princeton Univ. Bull., 1902, xiii, 90-100.) Résumés Subandhu's (beginning of seventh century, A.D.?) *Pāramitadattā*, as embodying some salient features of Hindu romance. It is a *campā*, a mixture of prose and verse, full of long compounds and puns. It is also characterized by "extremely detailed description accompanied by a marked lack of action, which forms a distinctive trait of the meditative Hindu mind."

Grünwedel (A.) Über Darstellungen von Schlangengöttern (Nāgas) auf den Reliefs der sogenannten gräko-buddhistischen Kunst. (Globus, Brunschwig, 1902, LXXXI, 26-30.) General discussion, with 6 text-figures, of the figures of *nāgas*, or snake-deities, on the reliefs belonging to the Gandhāra or "Græco-Buddhist" period of art in northwestern Hindustan and the adjoining regions of Afghanistan, with special reference to the works on this subject of Burgess and von Oldenburg.

Koganei (Y.) Messungen an männlichen Chinesen-Schädeln. (Intern. Ch. f. Anthr., Stuttgart, 1902, VII, 129-133.) Gives details of chief measurements of 70 skulls from the provinces of Chihli, Shantung, etc., in northern China and 14 from Formosa (chiefly the northern part). The average capacity of 69 north Chinese skulls is 1495.3 ccm., and of 14 Formosan Chinese skulls 1408.9 ccm. The prevailing type of both is mesocephalic (north Chinese 34.3%; Formosan Chinese 42.9%) and hypsicephalic (80% and 100%). The prevailing nasal index is

leptorhine (65.7%) for the north Chinese and platyrrhine (50%) for the Formosan Chinese.

Kon' (F.) K' 25-letiya Mimmanskago Muacya. (Russk. Antr. Zhur., Moskva, 1902, III, No. 1, 58-61.) Brief account (with figure of Museum and of H. M. Martianov) of the Mimmansk Museum in connection with its 25th anniversary. The existence of this excellent museum is due to the efforts of M. Martianov. The number of objects in the various collections has increased from 1,362 in 1877 to 36,458 in 1899.

Kurdow (K.) K' Antropologii Lezgini'. Kyrintsi. (Ibid., II, Nos. 3-4, 165-176.) Brief account, with 4 figures and brief tables of anthropometric data, of the physical characteristics, etc., of the Kurins, one of the sedentary peoples of Lezgian stock in the southern part of the Daghestan region of the Caucasus, who now number some 125,000. The subjects measured were 132 (all males), of whom 89 were adults (16-70 years) and the rest between 3 and 16 years of age. The Kurins are a well-built, rather tall people with decidedly brachycephalic head-form (56.1% of the adults and 83.7% of the children are hyperbrachycephalic and none of the latter and only 1.1% of the former dolichocephalic). A marked brachytype prevails. The horizontal circumference of the head is proportionately small, the chest circumference large, the arms and legs long. The author follows Pantuchov in styling the Kurins typical representatives of the "Adriatic (Dinaric)" race, somewhat mixed with Semitic ("mountain Jews") blood.

Littmann (E.) Arabic humor. (Princeton Univ. Bull., 1902, xiii, 91-96.) Treats briefly of "shadow-plays," pantomimes, comedies and comic stories, with examples of humor from them, with references to Jacobs' numerous studies of the "shadow-play" and kindred subjects. The Arabs are horn story-tellers and besides their "play to the galleries," some of the shadow-plays reveal "a fine art in the picturing of characters and of life." Examples of funny stories relating to Djihha and to Abu Nuwas are given. In the Arabic and Turkish shadow-play the "funny man" is called *Kuragi* or *Karaldi*, concerning which the author remarks:

Littmann—*Continued.*

"It is almost certain that this name is derived from that of the Egyptian statesman, Bahā ed-Dīn Qaraqūsh, who played a political rôle under Saladdin and his successors." He has been ridiculed and thereby immortalized.

Lutrenko (E. J.) К' antropologicheskoi. karakteristike altaiskago plemeni Telenget'. (Russk. Ant. Zhur., Moskva, 1902, III. No. 1, 1-29.) This anthropological study of the Telengetes, one of the Altaic peoples, is illustrated with 5 text-figures, 6 curve-diagrams and numerous tables of anthropometric data.—cranial and facial details, etc. The Telengetes are a very brachycephalic people: out of 83 individuals 68.67% are brachycephalic and 22.80% sub-brachycephalic. The prevailing type of nose is leptorhine (41.25). The Telengetes belong rather with the Turks than with the Kalmycks.

Marnet (M.) Aperçu sur le Brahmanisme. (Bull. Soc. de Recherch. orient., 1901-1902, XI, 45-47.) First part of a brief general account of Brahmanism.

S. Die Höhlenlandschaften Kappadoziens. (Globus, Braunsch., 1902, LXXVI, 58-63.) Describes, chiefly after Professor Sturzett, with 8 text-figures, the cave-houses and cave villages of Cappadocia.—Asia Minor is the classic land of artificial caves and holes, the country of troglodytes. Some of these dwellings may date back to 1000 B.C., although the Hittite knowledge of them at that period does not necessarily prove that they were then inhabited. Their date is very uncertain and many are doubtless quite modern.

Schmeltz (J. D. E.) Idol said to be used by the Boxers in China. (Int. Arch. f. Ethnogr., Leiden, 1902, XV, 106-107.) Brief description, with 2 text-figures, of an idol partly of wood, from Colombo, Ceylon, and credited to the "Boxers."

— Votive offering in Korea. (Ibid., 107.) Brief account, with text-figure, of iron casting of tiger (?), obtained by Mr J. C. Hartland from a shrine on the top of the Coryong pass.

von Schroeder (Dr) Ueber neue Entdeckungen in Ost-Turkestan und Kansu. (Sitzb. d. anthr. Ges. in

Wien, 1901, 139-141.) Résumés the results of the investigations of Stein and Bonin.

Seeland (N.) Le paysan russe de la Sibirie occidentale sous le point de vue anthropologique. (L'Anthropologie, Paris, 1902, XIII, 222-232.) Gives, with 6 tables, results of measurements (cranial, facial, nasal, stature, thoracic girth, dynamometric strength of right hand) of 241 soldiers (from Tobolsk, Tomsk, Perm, Semiretchensk, Ufa, Samara, Orenburg) of the garrison of Verni, government of Semiretchensk,—all between 22 and 27 years of age, and more than three-fourths of them from the government of Orenburg; and of 23 women, between 20 and 30 years of age, mostly married (the others servants), all natives of the province of Semiretchensk. Among the men the Slav type prevails (there is a slight Mongol infusion) with sub-brachycephaly; the most noteworthy anomaly is the adhesion of the lobule of the ear (2% in Orenburg, 20% in Tomsk); stature is greatest among the soldiers from Semiretchensk where the best conditions prevail; those from Perm show lower stature but no diminution of cranial capacity, relative thoracic girth or dynamometric strength. The rural population represented by these young men is healthy and robust. The fact that the men from Tomsk exhibit so large a percentage of cranial anomalies may be due, Dr Seeland thinks, to mixture with criminals. The type of the women is also Slav with little non-Aryan admixture; and a little less sub-brachycephalic. The head and face characteristics of the women are more harmonious.

von Seidlitz (N.) Neue Mittheilungen über den Bahlismus in Persien. (Globus, Braunsch., 1902, LXXXI, 156-159.) Brief account, after Arakelians, of the rise and progress of Bahlism (so-called from the *abw*-station of its founder. In Persia the Bahlis number some 3,000,000, and in other Oriental lands some 2,000,000.

Weipert (H.) Das Bon-Fest. (Mitt. d. d. Ges. f. Natur- u. Völkerkunde Ostasiens, Tokio, 1901, VIII, T. 2, 145-173.) Detailed account, with 9 plates, of the *Bon-fu*, or "All Souls" festival of the Japanese,—both the religious and the profane and merry-side. The main object of the *Bon*-ceremony was origin-

Weipert—Continued.

ally to honor the souls of the dead who were thought to return at the time it was held. It contains many relics of old Shinto belief and it really represents very ancient Japanese religious elements, of which the Buddhists have made use to their own advantage. Its combination of Shintoism and Buddhism is one of the factors of its popularity. Its celebration after the great labor of the rice-field is also in its favor. The dances and songs accompanying the *Bon-tsu* all over the country have only local variations.

AFRICA

Chil y Naranjo (G.) *L'âge de la pierre aux îles Canaries.* (L'Anthrop., Paris, 1902, xiii, 89-90.) Brief résumé. Refers to "triangles," stone weapons, caves, tumult, *pituleras*, etc., of the Canary Islanders, who were still in the Stone age in the fifteenth century.

von Eisenstein (R.) *Ueber das Schälwesen in Tripolitänien.* (Sitzb. d. anthr. Ges. in Wien, 1901, 142-146.) General account of education and educational institutions in Tripoli. The public schools for boys, two theological schools, two Turkish "state" schools and a Turkish girls' school (for daughters of officers and officials) are described. Curricula and text-books are briefly considered.

Förster (B.) *Aus dem Südostwinkel Kameruns.* (Globus, Braunschwg., 1902, lxxxii, 157-158.) Contains brief references to the Komome (famous for poisoned arrows, antagonistic to the whites), Baya (who are accepting Hausa language and culture), and dwarf-like Bayaga.

Hein (W.) *Reliefplatte von Benin.* (Sitzb. d. anthr. Ges. in Wien, 1901, 129-130.) Brief note on a photograph (reproduced as text-illustration) of a bronze plaque representing the homecoming of a king of Benin.

Kannengiesser (G. A.) *Verkehrverhältnisse in Deutsch-Ostafrika.* (Globus, Braunschwg., 1902, lxxxii, 53-57.) Treats of caravan-routes, roads, means of transport, etc., in German East Africa.

Laidlaw (G. E.) *Some ethnological observations in South Africa.* (Arch. Rep. Ost., Totonie, 1901 [1902], 132-

140.) Up to the middle of page 141 this article (with the exception of the plate and explanatory matter) is identical with the paper noted in the *American Anthropologist*, 1902, N. S., iv, 336. The new matter treats of implements, ornaments, weapons, etc., graves, modes of wearing hair, odd customs (witch-doctors, dalka-smoking, salutes, food, *sifting*, or dried meat, domestic animals, beer-strainers, ant-hill ovens), etc. Phallicryps, or "doppies," are in use by all males from 10 or 12 years up. The only gambling noted was with cards. "Mealic pap" corresponds to American "mush," and the rawhide "reins" to the *shag-nappi* of the Canadian Northwest.

Perilliev (L.) *Somalilintz.* (Russk. Antr. Zhur., Moskva, 1901, II, Nos. 3-4, 177-183.) Brief anthropologic and ethnographic sketch of the Somali. The author took head-measurements of 26 individuals between the ages of 20 and 25 years. Of these 12 were dolichocephalic, 8 subdolichocephalic, the rest mesocephalic and brachycephalic. Among the Somali prevails the curious practice of the excision of the uvula ostensibly as a preventive of throat-diseases.

Pouyaud (A.) *La colonisation en Tunisie.* (Bull. Soc. de Rochecouart, 1901-1902, xi, 8-18.) Continuation. Treats of domesticated plants and animals.

— *Simple aperçu sur les découvertes archéologiques faites en Tunisie.* (Ibid., 96-99, 116-118, 145-146.) Brief notes on the ruins of the water-temple of Zaghuun; the collections (bas-reliefs, statues, mosaics, pottery, etc.) in the Alani museum of Bardo. — this museum has a chronological series illustrating the history of the clay lamp in ancient Africa and exhibiting the evolution of its chief types, from the rude Panis to the fine Roman and the later and rude Christian; the amphitheater and reservoirs of Carthage; the collections (bas-reliefs, mosaics, Phœnician amphora, etc.) of the museum of Suse. Here, kept from the public eye, is a collection of lamps "magnificently ornamented in relief" — the subjects are of the most erotic and lubricious nature.

Schertz (H.) *Afrikanisches Steingeld.* (Globus, Braunschwg., 1902, lxxxii, 12-

Schurtz—Continued.

13.) Brief account, with 3 text-figures, of flat pieces of quartz and sandstone (pierced with a hole for stringing) formerly used as money in the Ewe country, western Africa. This "stone money" seems limited to a single section of the Ewe region, viz., Avatime. The old people say it is the money that preceded the cowries. It is still occasionally dug up, and seems to have been employed as ornament after losing its value as currency. According to the author, the Caroline islands are the only portion of the globe where "stone money" (aragonite) is still in use.

da Silva Barahona e Costa (H. C.)

O problema das obras publicas nas suas relações com o progresso e desinvolvimento dos nossos dominios Africanos. (Bol. Soc. de Geogr. de Lisboa, 1901 [1902], 429-458.) Discusses the question of public works in relation to the progress of the Portuguese dominions in Africa. The author has spent ten years in the public service.

Wilder (G. A.) The Bantu languages. (Hartf. Sem. Rec., Hartford, Conn., 1902, XII, 204-221.) Treats of Bantu linguistic area, foreign influences, characteristics of peoples and languages of Bantu stock, with particular reference to Zulu. The Bantu, numbering some 50,000,000, have, in spite of wide extension, little intercommunication, influences from outside of diverse sorts, etc., retained the original grammar and vocabulary of their language in a surprising manner. Mr Wilder does not venture to indicate which of the Bantu forms of speech most nearly represents the mother tongue, but adopts Zulu, of which he gives an interesting outline, as a standard. The famous "clicks," he thinks, have been made "greater curiosities than they really are," since they are among the most elemental sounds and to be found in many tongues. Noteworthy features of the Zulu tongue are musical flow, unusual capacity for manufacturing words, hyperbolic exaggeration and "hidden half-truths." According to the author, Ukulunkulu, the name of the Zulu "creator," is "a word, which by its form, *must* belong to the class of personal nouns." Zulu, in many parts of South Africa, has become a kind of "court language." Swahili and some other Bantu tongues

have been markedly influenced by Arabic; the Sakalava of Madagascar has been modified somewhat by the Malayan Hova. In the east and west Portuguese, and in the south English and Dutch, "have supplied no inconsiderable list of words to the Bantu languages with which they have come in contact." To the contact with Europeans in South Africa is also due "Kitchen Kafir," of which we learn: "this unscentific production and miserable jargon is fast becoming the common vehicle of communication between the white and black population at all the great industrial centers in South Africa." In this jargon, "Remove the flat-iron, and put on the kettle" is rendered *Footag lo flat-iron, wawa lapa lo kettle*, literally, "Get out! that flat-iron, come here kettle!" There is, however, a great future for the real Bantu language in Africa, as the race is not at all decadent or disappearing.

INDONESIA, AUSTRALASIA, POLYNESIA

von Bülow (W.) Der Landbesitz der Eingeborenen auf der Insel Savaii, Deutsch-Samoa. (Globus, Umschw., 1902, LXXXI, 85-87.) Brief account, with text-map, of the property-relations of the natives of the island of Savaii in German Samoa. The regulation of these is one of the most difficult problems of the German authorities.

Giglioli (E. H.) Delle ascie litiche di Mangais e più specialmente della "toki mahia," simbolo di pace e della triplice "toki tane-matauriki," ecc. (Arch. p. l'Antr., Firenze, 1902, XXXII, 291-301.) Gives an account, with 3 text-figures, of Mangaian stone hatchets, of which there are five kinds. The *toki mahia*, or "peace axe" (in ancient times peace was celebrated by carrying this axe, a symbol of peace, in procession to drum music), and the *toki tane-matauriki*, sacred to the god *Tane-matauriki*, are treated with some detail. The latter is a triplex instrument.

Di due forchettoni cannibaleschi fatti con ossa dalla Nuova Caledonia. (Ibid., 303-306.) Brief account of two cannibal forks of bone from New Caledonia.

Hein (W.) Schoetensack's Abhandlung: Die Bedeutung Australiens für die

Hein—Continued.

Herausbildung des Menschen aus einer niederen Form. (Sitzg. d. anthr. Ges. in Wien, 1901, 141-142.) Disagreeing critique of Schoetensack's paper on Australia as the birthplace of man, noticed in the *American Anthropologist*, 1902, N. S., IV, 176.

von Hügel (A.) Maori sacred images. (Int. Arch. f. Ethnogr., Leiden, 1902, XV, 99.) Brief notice, with plate, of three Maori idols now in the Cambridge (England) Museum of Archeology and Ethnology. See also *American Anthropologist*, 1900, N. S., II, 760.

Jayne (H. H.) Mededeelingen omtrent maskers in den Indischen Archipel. (Ibid., 28-29.) Brief notes on mask-plays in the East Indies, with plate. Based on information received from Dr Adrian in central Celebes. In the Minahasan dialect the word "masker" (*leton*) is derived from the word for "man" (*ton*).

Kruyt (A. C.) Koperhelme von Celebes. (Ibid., 53.) Brief account, with text-figure, of a copper helmet from central Celebes (Tosapu).

Mathews (R. H.) Les indigènes d'Australie. (L'Anthropologie, Paris, 1902, XIII, 233-240.) Treats of peopling of Australia, migrations, marriage-customs, clans, initiation-ceremonies, etc. The author thinks neither promiscuity nor communal marriage has existed among the Australian tribes; that the initiation ceremonies contain many elements derived from actual combat; that the original inhabitants of Australia were of negroid type, and that while the Australians have preserved their Neanderthaloid type, their relatives, the Dravidians of India, have evolved considerably from it. Mr Mathews also thinks that, while Malay fishermen may have visited the north coast, no portion of Australia has ever been occupied by that race as colonists. No serious influence upon physical type or language has come from that source.

Schmeltz (J. D. E.) Messingtrummeln von Alor. (Int. Arch. f. Ethn., Leiden, 1902, XV, 32-34.) Brief notes, with 2 text-figures, on a brass drum from Alor near Timor. These drums, known as *mukho*, are used to drive away diseases, which are thought to be caused by earthquakes. The old *mukho* are very valuable. In the Alor-

Pantar region and the surrounding islands the *mukho* circulate as currency and form the capital of the natives of upland and mountain. The ornamentation of the *mukho* in question suggests that it was made in the XIV-XV century. See also p. 53.

Schmidt (W.) Die Cambridge-Expedition nach der Torresstrasse. (Globus, Braunschwg., 1902, LXXXI, 87-92.) Résumé and criticism of the *Report of the Cambridge Anthropological Expedition to Torres Straits* (see *American Anthropologist*, 1901, N. S., III, 751) with particular reference to the data on color-naming and color-vision. Father Schmidt suggests for the unexplained *kakabek*, "white," an etymology from *kak*, "not, no," which would make this color-name signify "absence of color," but this is very doubtful. Other etymologies for other color-names are also given.—useful additions to the material of Rivers.

Semon (R.) Australier und Papuas. (Corr.-Bl. d. deutschen Ges. f. Anthr., München, 1902, XXXIII, 4-8, 11-14, 22-23, 32-34.) Résumés data on somatology, arts and industries, psychic qualities, languages, religion and mythology, social institutions, etc. The author, who has visited both Australia and New Guinea (he spent 9 months in the interior of Queensland, 1891-1892) and is a zoologist, comes to the conclusion that the Papuas are not a mixed race (the product of the intermingling of the other races about them). Either they are an independent human race, coordinate with the other great stocks, or the relationship between them and the African Negro must be admitted. But so far as linguistic relationship of Papuas and Negroes can be traced, and ethnographic proofs are by no means convincing. The data suggesting such kinship are those of physical characteristics, personality, temperament, etc. The Australians, Professor Semon thinks, "are *thru*ly akin to no other human race," not even the Papuas, but he inclines to regard them as "a low type; distantly related to the Caucasian,"—chiefly on physiognomic grounds.

Thilenius (G.) Die Tätowierung der Frauen auf den Loughlaninseln. (Globus, Braunschwg., 1902, LXXXI, 46-47.) Describes briefly, with text-figures, the tattooing of the women of the

Thilenius—*Continued.*

Langhlan islands, near New Guinea. The chief women are tattooed, and legend seems to assign to it a sort of religious significance,—the snake-bridge to the other world shrinks and causes the soul of the untattooed to fall into the sea. The tattooing called *kutubuat* is performed chiefly by old women, is begun in childhood and continued for several years. The general pattern is bilateral-symmetrical.

AMERICA

Beauchamp (W. M.) Onondaga plant-names. (J. Amer. Folk-Lore, Boston, 1902, xv, 91-103.) Gives list of names of trees, fruits, vegetables, plants, weeds, etc., with interpretations into English and explanatory notes. This paper is interesting alike from a linguistic and a psychological point of view. The uses of the various plants considered are indicated where known. According to Dr. Beauchamp, "Virginia creeper," "poison ivy" and "bitter-sweet" all have the same name; the Indians not making always "the nice distinction we might expect." With one or two prominent exceptions, "the grass family was of moderate importance in the Iroquois." Many weeds (especially if not troublesome) go without names. Moreover, "a very large number of our native plants are now unknown to the Onondagas, and if they ever had names they have disappeared." Corn, beans, and pumpkins (squashes) were termed collectively "those we live on." The names of plants introduced by the whites deserve special attention.

Boyle (D.) Accessions to the Museum. Notes. Ossuary in Clinton township, Lincoln co. The Yellow Point mound. Mounds generally. Earthwork in Township of Moore. (Arch. Rep. Ont., Toronto, 1901 [1902], 3-35.) Descriptive catalogue of specimens 22,130-23,086, embracing Eskimo and North and South American Indian and African objects. In the "Notes," with 7 text-figures, are briefly described an unfinished "banner stone," a stone pipe, with unusual pits round the base, a piece of pottery from Mississippi, two clay vessels resulting from an attempt to resuscitate the art of the Ojibwa of Algoma, some objects of catlinite found in a grave near Sandwich, Ont., an abso-

lutely perfect clay pipe from Brantford township, etc. The brief account of an ossuary on low-lying ground (which is rare) is accompanied by 6 text-figures (skulls and femur). The femur has an unusual curvature. Two of the skulls have wormian bones. The description of the Yellow Point mound, near the mouth of Twenty-Mile creek, Lincoln co., with 8 text-figures, details investigations made in August, 1901. It appears that here a living human being had been burned at the stake after being tortured. The occurrence of mounds in this region is rare. The Moore township earthwork, of which a plan is given, is 300 × 176 feet in diameter. Few relics have been found in the enclosure or near it.

Brodie (W.) Animal remains found on Indian village sites. (Ibid., 44-51.) Brief account of animals' remains from the Indian village sites of the township of Pickering and other parts of the county of York, Ontario, the result of Dr. Brodie's investigations since 1846. The species of mollusks found number 16, fish 2, reptiles 2, birds 3, rodents 8, ruminants 3, carnivora 12. The uses of animal bones, etc., by the Indians is indicated where known. The employment of the brains in tanning, etc., accounts very often for the fact that the skulls of mammals are found broken. In two midden heaps there were discovered "human bones, which had been broken as the other animal bones were, strongly suggestive of cannibalism." The author considers the estimate moderate that "a ton of archaeological material was collected from the county of York sites."

Brown (L. D.) Indian occupation in Missouri. (Ibid., 38-43.) Brief accounts of the finds at the sites of three Indian camping-places or villages in the township of E. Missouri, Oxford Co., Ont., in the neighborhood of a small lake. These may have been settlements of the "Neutral Indians." Among the objects discovered are "hearth-stones," hundreds of stone axes, thousands of flint implements, slate gorgets and tubes, bird amulets, iron tomahawks, banner-stones. A brief description (from the recollection of a settler) of an Indian burial *ca.* 1830 is given, also the record of another from the daughter of a pioneer. According to the belief of an old trader some sort

Brown—Continued.

of picture writing (for camp-direction) was in use among the Indians. An instance of Indian fidelity is also recorded.

Cadle (C.) A remarkable ceremonial pipe. (Rec. of Past, Washington, D. C., 1902, I, 218-220.) Gives, with four-views illustration, an account of the discovery, in June, 1899, in a mound on the Shiloh battlefield, Tennessee, of a pipe of stone (like catlinite) in the form of a human being bent on one knee, the bow and place for the mouth-piece in the back. The author describes it as "the most perfect piece of prehistoric carving that I have ever seen." The remains of various kinds found in the mound "seem to show that three persons of importance, with their ceremonial pipe, were placed upon the surface of the ground, covered with logs, and a mound containing about 1,000 cubic yards of earth placed over them." Like the pottery, the pipe was broken, perhaps "killed" ceremonially.

Chamberlain (A. F.) Memorials of the "Indian." (J. Amer. Folk-Lore, Boston, 1902, XV, 107-116.) Treats of place-names (e. g. *Indian Territory*), names of plants (e. g. "*Indian corn*"), and other things containing the term "Indian," likewise those containing "squaw," "pappoose," "savage," etc. The "Indian" in children's games and songs is also considered.

— Work accomplished in the study of American folk-lore. (Ibid., 127-129.) Brief general review of investigations during 1888-1900.

Delabarre (E. B.) Report of the Brown-Harvard expedition to Nachvak, Labrador, in the year 1900. (Bull. Geogr. Soc., Phila., 1902, III, 65-212.) This well-illustrated report, besides notes here and there on the Eskimo and pictures of groups and encampments, contains (pages 143-158) a section on "life on the Labrador coast," dealing briefly with the Eskimo, Moravian missions and H. B. C. posts, white settlers and summer fishermen, general conditions of life, the Labrador medical mission, etc. There are about 1000 Eskimo now along the Atlantic coast,—of these, those from Hopedale southward are chiefly *metis*, those to the north being largely of pure blood. The Moravians who have had missions

in Labrador for 125 years have influenced the Eskimo much. The Eskimo of this region are given a very good character.

del Campana (D.) *Notizie intorno al Ciriguani*. (Arch. p. l'Autr., Firenze, 1902, XXXI, 17-144.) The eleven chapters into which this elaborate and valuable monograph (with 11 plates) is divided treat of origin, language, statistics, geographical distribution; physical characters, morals; religion and religious beliefs, deities, sun-worship; political organization, chiefs, etc.; villages and houses, fire, furniture and domestic animals, dress and ornament, personal hygiene, etc.; family, polygamy, matrimonial formalities, consanguinity, the sexes in the family, childbirth, infanticide; education of boys and girls, imposition of the *tumbela*, or lip-ornament; cookery, maize-foods, fishing and hunting, *cánga* (a drink made from maize), agriculture, domestic animals; visits, festivals, poetry and music, private feasts; diseases, medicines, death, funerals, mourning customs, etc.; war, arms and musical instruments used in war, ceremonies preparatory to combat, women's song, marching, assault upon a village, return of the victors, defence of the village, peace. Pages 133-139 are occupied with a glossary of words used in the text, and pages 140-141 by a bibliography of 29 titles. The plates represent: The chief of Cuevo and his family, a group of Chiriguano men, a group of Chiriguano women, a group of Chiriguano children from the village of Cimeo, Chiriguans at work, the interior of a hut, implements, instruments, weapons, etc. Pl. VII-X give views of the mission and village of Cimeo.

— *Conna su i Tapii ed i Tapihete*. (Ibid., 283-289.) Ethnographical notes on the Tapii and Tapihete, of the Izoce region of the Bolivian Gran Chaco, by language, customs, government, etc., closely related to the Chiriguano, whom they also resemble physically. The *subiceps* or pectoral metallic plate and the *tumbela* of wood are in use. The isolation of females at puberty is practised. The national dance of the Tapii seems to have been modified not a little by contact with the whites. The author notes the facility with which the Amerinds of this part of the continent learn the

del Campana—*Continued.*

speech of other tribes,—it is not uncommon to find tribes who are Guaraní in language, but in physical type something quite different.

— Sopra alcuni oggetti etnografici appartenenti o attribuiti ai Maciculi esistenti nel Museo Nazionale di Antropologia di Firenze. (*Ibid.*, 377-393.) Brief account, with 7 text-figures, of a wooden ear-plug, a wooden pipe, and a sort of wooden whistle or flute from the Lengua; a shell necklace, a pipe, two fire-sticks, a fish-hook, two bows and some forty arrows from the Angaité. Both the Lengua and the Angaité belong to the primitive tribes of the Paraguay Gran Chaco. The description of the objects in question is accompanied by brief ethnographical notes on the peoples concerned.

Dorsey (G. A.) L'âge de pierre actuel dans l'Amérique du Nord. (*L'Anthrop.*, Paris, 1902, xiii, 91-92.) Very brief résumé. Author points out that all of America north of Mexico was practically in the Stone age only.

Ehrenreich (P.) Stewart Culin's Forschungsgänge zu den Indianern des fernsten Westens. (*Globus*, Braunsch., 1902, lxxxv, 153-157.) Abstract, with 5 text-figures, of Culin's account of his visit to the Indians of the Far West. See *American Anthropologist*, 1901, 8, 3, III, 576.

Ellis (H.) Mescal: A study of a divine plant. (*Pop. Sci. Mo.*, N. Y., 1902, lxi, 52-71.) Gives brief account of Amerindian use of mescal (*Anhalonium Lemoni*) and details results of author's experiments upon himself with this unique drug, mainly sensory in its effects and leaving (even in large doses) the intellect unimpaired. Through mescalism one seems almost to "attain an objective knowledge of one's own personality." Mr Ellis concludes that "the Indians who raised this remarkable plant to divine rank, and dedicated to it a cult, have in some measure been justified, and even in civilization there remains some place for the rites of mescal."

Fewkes (J. W.) Prehistoric Porto Rico. (*Science*, N. Y., 1902, 8, 3, xvi, 94-108.) Address of Vice-President, Section H., A. A. A. S., for 1901. Résumés our present knowledge

of Porto Rican archeology, ethnology, folklore, etc. Touches briefly on legends, place-names, survival of old Indian art, industry, rock etchings, pictographs, caves, pottery, picture-writing, stone-collars, amulets, *semit* and the *semit*-cult, ancestor-worship, *arellas*, dances, growth-goddess ceremony, songs, ball-game, etc. The account in *extenso* of Dr Fewkes' recent investigations in Porto Rico will appear in a Report of the Bureau of American Ethnology soon to be issued. Porto Rico seems to promise much to the anthropologist.

Förstemann (E.) Eine historische Mayo-Inscription. (*Globus*, Braunsch., 1902, lxxxvi, 150-153.) Detailed study, with text-figure, of the inscription of Piedras Negras on the Usumacinta river near Palenque discovered by Maler and studied also by Mandalay. Förstemann finds references in the inscription to warlike expeditions, a coronation, etc. Certain characters suggest the appearance, perhaps, of the Spaniards.

Geddes (J.) Canadian-French. The language and literature of the past decade, 1890-1900. (*Krit. Jahrb.* 2. d. Fortsch. d. Rom. Phil., Erlangen, 1902, v, 1294-1360.) This article, which has also been reprinted in pamphlet form (66 pp.), is a critical, descriptive and annotated bibliography of works of a bibliographical, biographical, historical, linguistic, ethnological, literary, religious, scientific, educational, etc., character relating to or published in French Canada during the last decade. Pages 1-32 are occupied by a general historical introduction and pages 64-66 by a useful alphabetic finding-list of subjects and authors. This is an excellent piece of bibliographical work. The extent of the literature of Canadian French is unknown except, perhaps, to specialists.

Guevara (T.) Historia de la civilización de Araucanía. (*Anales de la Univ.*, Santiago de Chile, 1901, ix, 461-507, 589-612, 645-672.) Deals chiefly with the sixth rising of the Indians and the events from 1815 to 1825. The relation of the Indians to the patriots of the revolution is detailed. Their chief Araucanian ally was Juan Colipi, who died in 1850 of poison administered by order of another chief, his

Guevara—Continued.

enemy. Pages 463-501 are concerned with agriculture, commerce, material and social conditions, etc.

Hein (W.) Ein Medicinpfife der Payaguá-Indianer. (Sitzb. d. anthr. Ges. in Wien, 1901, 128-139.) Brief description, with 2 text-figures, of a carved wooden pipe of the Payaguá Indians with *Paradise motif*.

Hough (W.) A collection of Hopi ceremonial pigments. (Rep. U. S. Nat. Mus., Wash., 1900 [1902], 463-471.) Catalogue of 29 items of ceremonial pigments from the Hopi (Moki) Indians of Arizona, with introductory observations (465-468). The native names are given and the making of Nos. 1, 4, 11, described in detail. The use is stated where known. Concerning the color-sense of these Indians: "The Hopi apparently do not discriminate indigo, blue and green; at least they do not have separate words to describe these colors. Violet is classed with the red; orange is not differentiated from yellow or red." But practical knowledge of all the spectrum colors is not absent, as their pigments and dyes show.

Hudson (J. W.) An Indian myth of the San Joaquin valley. (J. Amer. Folklore, Boston, 1902, xv, 104-106.) Gives (in English) two Mariposan versions of an ancient myth bearing upon the prehistoric topography of a certain section of the San Joaquin valley,—the former existence of a sea in this basin.

Hunter (A. F.) Wampum records of the Ottawas. (Arch. Rep. Ont., Toronto, 1901 [1902], 52-55.) Brief account, with 4 figures, of four wampum-belts of the Ottawa Indians. The drawings from which the illustrations here printed were made are "facsimile copies of the belts (their full size), and were made by the late Rev. George Hallen, from originals lent him by the Indian chief, Asekikink (Blackbird), in 1852." Belt No. 1, which has on it human figures with hands clasped, has also woven in the date 1764; belt No. 2 has several names of Indians and English words written on it by Mr. Hallen in explanation of the 24 human figures it contains,—this belt may be one given by Sir Wm. Johnson at the famous Niagara powwow in 1764; belt No. 3 is described as "a hybrid of Indian pictographs, Roman capitals and Arabic

numerals," and bears the date 1786; belt No. 4 bears the name of Lieut. Col. McDonall, who relieved Mackinaw (here spelt McKinac) in 1814. All these belts represent the mixture of Indian and European symbols. A brief note at the end of this article by David Boyle calls attention to the recent "wampum craze" among collectors and to the fact that so many of these belts were "made by Europeans."

— Notes on sites of Huron villages in the township of Medonte, Simcoe county. (Ibid., 56-100.) More or less detailed account, with archeological map and 4 text-figures, of 75 village sites. Topography, general characteristics, fort and other trails, etc., are noted. The Huron tribes represented are the Attignenonghacs (Cord people) and a few villages of the Arendaronons (Rock people), whose chief seat was in Oro near Bass lake. According to Mr. Hunter, "the favorite dwelling-place of the Hurons was on the hills, nearly always at an old beach where abundance of spring water could be had." The villages were "of all sizes," some doubtless palisaded, but "earthworks, in the special sense of the word, are entirely absent," and the few embankments or trenches of which traces remain were probably due to the white missionaries, traders, etc. No mound burials are noted among the Hurons of Medonte. Several bonepits are described in detail,—the Kinghorn pit contained several hundred skeletons (or cranial), besides numerous relics.

Koch (T.) Die Guaikuristämme. (Globus, Braunsch., 1902, LXXXI, 1-7, 39-46, 69-78, 105-112.) General ethnographic sketch with considerable detail of the Caduvei and Toba, and brief mention of the Moxobi, Abipones, Payaguá and Guachi. In the case of the first two tribes history, habitat, physical characteristics, mode of life, social and economic conditions, dress and ornament, weapons and utensils, industries and manufactures, social classes, festivals and games, sickness and death, religion, language, etc., are treated, and on page 112 a brief comparative vocabulary of the chief Guaikurú dialects is given. The observations of Dr. Koch were made at the end of 1890 at Porto Martino (Matto Grosso). The Guachi are now quite extinct; of the Abipones possibly a few individuals may

Koch—*Continued.*

still survive in Santa-Pé; the Caduvei, who, a century ago counted over 1,200 souls, now number little more than 100; the Payaguá survive to the number of 40-50 as against 1,000 in the time of Asara; of the Mocobi only a few small groups are left; the Tobá are still quite numerous. The language of the Payaguá has many foreign (Guaraní, etc., and Spanish) elements; the Guaschí language is only remotely Guaschirian. The Caduvei retain their ceramic industry along with somewhat of its ancient completeness. The *pilote* has disappeared; body-painting has taken the place of tattooing; the feather head-dress is obsolete; the men smoke and the women chew tobacco (Koch thinks these Indians learned its use from the whites); firearms are gradually driving out the bow-and-arrow (spear and club have already gone); gambling-games are much indulged in. The Tobá appear to have been much less influenced by the advent of the whites. With them the shaman is still in full flourish; infanticide and killing the old prevail. Dr Koch's valuable essay is furnished with abundant bibliographical references and accompanied by a colored plate (ceramic ornamentation) and 27 text-figures.

Laidlaw (G. E.) Notes on North Victoria village sites. (Arch. Rep. Ont., Toronto, 1901 [1902], 100-108.) Besides notes on specimens recently donated to the museum and an account (with 2 text-figures) of an owl and a raven pipe of dark slate, the article contains a brief description of a newly found site on Balsam lake, and a list up to date of the locality of village sites, graveyards, large pits and cache pits. An embankment referred to in a previous report is said to have been built by the French.

MacCurdy (G. G.) Les rasoirs en obsidiennes des Aztèques. (L'Anthrop., Paris, 1902, XIII, 93.) Very brief abstract. This paper has appeared in full in the *American Anthropologist*, 1900, N. S., II, 417-421.

Maier (T.) Neue archäologische Forschungen in Yucatan, 1895 bis 1901. (Globas, Bruchswg., 1902, LXXXI, 14-15.) Résumés des recherches in Yucatan reported on in detail in the *Memoirs of the Peabody Museum*, Vol. II, No. 1.

Mason (O. T.) Aboriginal American harpoons: A study in ethnic distribution and invention. (Rep. U. S. Nat. Mus., Wash., 1900 [1902], 189-304.) In this excellent essay, Professor Mason discusses with considerable detail as to construction, technique, and use the harpoon among the aborigines of South, North, and Arctic America. South America has not been favorable to the harpoon and only a few types were developed (Fuegian, Chilian, Brazilian, Carib). In the salmon regions of the Northwest Pacific the harpoon flourishes, as it once did in the turtle regions of the Atlantic. It reaches the lowest level with the Tulare Indians of California. Naturally enough, it is in the Arctic, to which pages 256-302 are devoted, that the harpoon, its parts and its accessories, reach the most varied and unique forms. The introduction of iron has caused numerous modifications and improvements, as may be seen from comparison with the rudier Fuegian implement. The Eskimo harpoons "are of every variety, barbed or toggle." It is worth remarking that "if the flat varieties of eastern Asia, with line hole in the plane of the blade, are the more aboriginal, their nearest kin are to be seen, not in Bering sea, but around Greenland." A toggle harpoon from Bristol bay (p. 297) "forms a connecting link between the Eskimo toggle head and the forms allied to it among the Indian tribes farther south." Of the Eskimo harpoons no two are exactly alike, there being a range of individual choice in many parts.

Meeker (L. L.) White man. (J. Amer. Folk-Lore, Boston, 1902, XV, 84-87.) A Siouan tale told to children "to teach them not to be cross like bears." Possibly borrowed from the Arapaho. The "clown," "bear-women," a cannibal meal, and "white man" figure in the story.

de Nadaillac (Marquis). Les Eskimous. (L'Anthrop., Paris, 1902, XIII, 94-104.) Résumés Nelson's study of the Eskimo about Bering strait in the *Eighteenth Report of the Bureau of American Ethnology* (Washington, 1890). The author seems to think that the Eskimo have fallen from a state of higher culture, but may rise again.

Pradt (G. H.) Shakok and Miochin: origin of summer and winter. (J. Amer. Folk-Lore, Boston, 1902, xv, 88-90.) A legend of the Pueblo Indians of Acoma telling of the victory of Miochin, the spirit of summer, by reason of which summer and winter exist. A very similar legend is current among some of the Algonquian tribes of the Great Lakes.

Smith (H. I.) Archeology of Lytton, B. C. (Rec. of Pac. Washington, D. C., 1902, i, 205-218.) The facts in this article, with 2 plates, are the same as those in Mr Smith's monograph in the *Memoirs of the American Museum of Natural History*, 1899, ii, Anthropology 1, 129-161.

Starr (F.) The Tastoones. (J. Amer. Folk-Lore, Boston, 1902, xv, 72-82.) Describes, with 4 plates (characters

and masks), the popular drama of *The Tastoones* as given at Mesquitan, a suburb of Guadalajara, Mexico, in 1895.

Wintenberg (W. J.) Supposed aboriginal fish-weir near Drumbo. (Arch. Rep. Ont., Toronto, 1901 [1902], 35-38.) Brief description, with plan, of a "fish-weir" consisting of two parallel rows of tamarack stakes in the recently drained Burgess Lake, near Drumbo, in the province of Ontario. The stakes were some 80 in number, 6 ft. long and $2 \times 3\frac{1}{2}$ inches in diameter. They are on an average 30 inches apart, which is also the average distance between the two rows. It has been suggested by some that the interstices were filled with brush. Mr Wintenberg states that "there are only two recorded instances of the occurrence of fish-weirs in Canada."

ANTHROPOLOGIC MISCELLANEA

Study of Philippine Languages at Johns Hopkins University.—The native languages of the Philippines fall into two general divisions: (1) the languages of the diminutive, dark-skinned Negritos who live in scattered tribes in the interior mountain regions of the larger islands, and who probably constitute the remnant of the aboriginal population of the islands; (2) the languages of the various Malay tribes, Christian, Mohammedan, and Pagan, which occupy by far the greater part of the archipelago.

* About the idioms of the Negritos very little is known, and that little seems to indicate that they are very similar to the Malay dialects. This similarity, however, is perhaps to be explained as due to the influence of the languages of the surrounding Malay tribes, especially as, according to Spanish authorities, the Negrito languages are of monosyllabic structure and entirely different from the languages of the Malays.

The idioms of the Malay tribes form a closely connected group of tongues, constituting a branch of the Malayo-Polynesian family, which comprises within its limits the Kanaka of Hawaii, the Maori of New Zealand, the languages of the head-hunting Dyaks of Borneo, of the Malays of the China seas, and of the Hovas of Madagascar. The estimates of the number of the Malay dialects range from about twenty to over fifty, but of some of these practically nothing is known save the name. The best known of the Philippine tongues are naturally the languages of the more or less civilized natives, the Christian tribes in the north, and the Mohammedan tribes in the south. The principal languages of the Christian tribes are the Ibanag, Ilocano, Pampango, Pangasinan, Tagalog, and Bikol of Luzon, and the Visayan of the Visayan islands; those of the Mohammedan tribes are the Sulu of the Sulu sub-archipelago and the Maguindanao of Mindanao.

All of these languages are made up principally from dissyllabic roots and are practically non-inflectional; an extensive use, however, is made of reduplication in the formative processes of both noun and verb. Verbal force is conferred by certain particles which are combined with the root, though there is no sharp distinction between the construction of nominal and verbal forms. The character of the verbal form to be used in a sentence depends on what element is of most im-

portance in the mind of the speaker or writer. This element is made the subject and the verb is conformed to the character of this subject, standing in different forms, according as the subject is the agent, the object, the cause, the place, etc., of the action. The verb stands in the active voice only when the agent is the subject; in all other cases it is in the passive. Passive constructions are far more numerous than active; in fact they are the regular rule, and the active the exception. Modifying words are usually joined to the words they modify by connective particles which are identical with the relative pronouns.

The vocabularies of the Philippine languages contain several foreign elements. The languages of the Christian tribes contain a number of Spanish, those of the Mohammedan tribes a number of Arabic words, especially such as relate to religion. Besides this, however, some of these languages, e. g., Tagalog and Visayan, possess, like Malay, Javanese, etc., a number of Sanskrit words.

The most important of the Philippine languages is the Tagalog, spoken in the capital city of Manila and throughout the middle regions of Luzon; and, as was fitting, the instruction in Philippine languages at Johns Hopkins University began with this idiom. A course in elementary Tagalog was conducted throughout the year of 1901-02, the instruction being made as practical as possible. In the second half-year a series of lectures were given on the Philippine islands, with special reference to the native tribes, their manners, customs, religion, language, etc. These courses were attended by eight students.

Next in importance to Tagalog among the languages of the archipelago stands Visayan, which is spoken, probably, by more people than any other Philippine dialect. In the year 1902-03, at Johns Hopkins University, therefore, instruction in this language is offered, as well as an elementary and a more advanced course in Tagalog.

All courses are given in the Oriental Seminary, of which Prof. Paul Haupt is director, and are under the charge of Dr Frank R. Blake, a graduate of the University and a student of Semitic and Sanskrit.

In connection with the work in Tagalog, Dr Blake has prepared an Elementary Tagalog Grammar for practical purposes, which is now complete, and will probably be published shortly. This Tagalog Grammar will be followed as soon as possible by manuals of Visayan, Sulu, and the principal other Philippine dialects. A special study will also be made of the Sanskrit element in Tagalog and Visayan.

F. R. BLAKE, Ph. D.

The Primitive "Baby-machine."—The notice by Dr Otis T. Mason on this subject which I read recently in the *American Anthro-*

peologist (vol. iv, No. 2, p. 359) induces me to make the following remarks: This apparatus for teaching infants to walk is also well known all over Java, not only on the coast, but also in the remote mountain districts of the interior. I found it, for example, about five years ago, among the Tenggerese. The Malay popular name for the apparatus is *putt-ran*, from the verb *putar*, or *putir*, "to turn," "to turn around."

A specimen which I obtained from a native of Batavia has a total length of about 67 centimeters. Its general appearance is shown in the accompanying figure. The pointed stick, on which the bamboo shaft is fitted, is driven into the earthen floor, and enables the infant to walk in a circle, leaning upon the horizontal wooden stick, which projects from the bamboo shaft. Strange to say, in some of the best Dutch works on the ethnography of Sumatra and Java, which I perused for the purpose of finding something on the subject, no mention of it is made. It would be worth while to inquire whether the *putt-ran* is found in the Philippines.

H. TEN KATE.

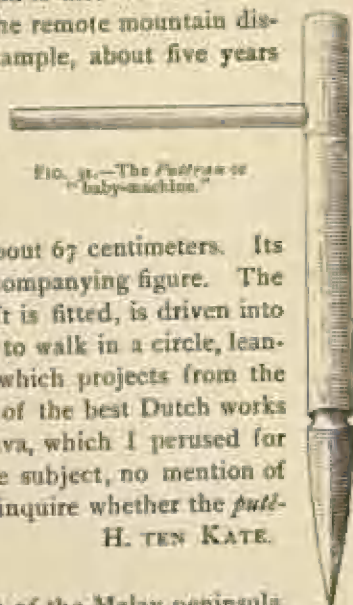


FIG. 31.—The *Putt-ran* or "baby-machine."

Arrow Poison.—The arrow poison of the Malay peninsula, together with some of the adjacent parts of the continent, the islands of the archipelago, etc., known as *ipoh*, has been made the subject of a doctor's thesis at the University of Zürich. Dr Paul Geiger's *Beitrag zur Kenntnis der Ipoh-Pfeilgifte* (Berlin, 1901, 102 pp.) is quite exhaustive in its treatment of the topic and related matters, the bibliography titling more than a hundred publications of diverse sorts and values. Since its appearance, however, several other contributions have appeared, among which may be mentioned Dr C. G. Seligmann's *Note on the Preparation and Use of the Kenyah Dart-poison Ipoh* (*Four. Anthr. Inst.*, Lond., 1902, xxxii, 239-244), relating to Borneo, and Dr L. Camus' *Recherches expérimentales sur le poison des Mois* (*Rev. de l'École d'Anthr. de Paris*, 1902, xii, 119-146), dealing with northern Indo-China.

A. F. C.

"Foreign" Objects in Ohio Valley Mounds.—Mr Clarence B. Moore calls my attention to the use of the word "foreign" in my review of Mr Fowke's book, published in the last number of the *American Anthropologist* (page 513). In employing the term I meant objects foreign to Ohio,—that is, made of substances not found in Ohio in their natural state. Of course nothing of European origin has been found, so far as I am aware, in the mounds of southern Ohio. Indeed, I have

opened more than a hundred mounds in this section, and all my field observations tend to prove the pre-Columbian origin of the archeological remains of Ohio valley. I thank Mr Moore for calling my attention to the use of the term mentioned, since others may have been led to misinterpret it.

WARREN K. MOOREHEAD.

Pigment Spots.—To the evidence cited by H. Newell Wardle (*Anthropologist*, N. S., IV, pp. 412-420) regarding "Mongolian spots," etc., the following passage from Professor Frederick Starr's *Notes upon the Ethnography of Southern Mexico* (pt. 2, 1902, p. 13) should be added: "It is a matter of common belief among mestizos that every Maya has a violet or purple spot on the back at the vortex coccygeus: this is called the *uila* (bread) and it is a common insult to refer to it,—e. g., to say '*uan ha uila*.'" The Mayas are probably to be added to the list of peoples exhibiting "pigment spots," and the opinion of ten Kate that such spots are quite common is further confirmed. A. F. C.

Turmas and Tumas.—I have read the interesting article by Mr Francis C. Nicholas on "The Aborigines of the Province of Santa Marta," printed in volume III, number 4, of the *American Anthropologist*. At the bottom of page 614 is mentioned *turmas*, with the statement that it is "a word not understood now in the province." I lived with the Araucos (Aurohuacos) and frequently ate *turmas*. They are potatoes of a very small kind, but of exquisite flavor. Of course it has nothing to do with *tumas*, or red beads found in graves. *Agrocacha*, by the way, is known everywhere under the name of *arracacha* (*Conium esculatum*).

ELISÉE RECLUS.

Negro Companions of Spanish Explorers.—In connection with Mr Wright's paper in the *Anthropologist* (N. S., IV, pp. 217-228) it should be mentioned that the vessel of Captain Arellano (a deserter from the expedition of Urdaneta to the Philippines in 1564-65), which was the first to make a return voyage from the western Pacific to Mexico, is said to have been steered by a mulatto pilot. Arellano, according to Blumentritt (*Versuch einer Ethnographie der Philippinen*, p. 63), made this trip in order to win the prize offered by the King of Spain for the first traversing of the South sea from west to east.

A. F. C.

Virchow Bibliography.—The "Virchow-Bibliographie: 1843-1901" (Berlin, 1901, 182 pages), compiled by various hands and edited by Dr Schwalbe, contains practically all the titles of the publications of the great German anthropologist. The first section (pages 1-50) is

devoted to Medicine, Hygiene, and General Science; the second part (pages 51-182) to Anthropology, Ethnology, and Prehistory.

A. F. C.

MR HARLAN I. SMITH's "Shell-heaps of the Lower Fraser, British Columbia," which will appear in volume iv of the *Memoirs* of the American Museum of Natural History, is in press. This quarto deals with the vast shell deposits of the northwest coast of America, and endeavors to reconstruct from the remains found in these accumulations of the refuse of extinct villages the story of the prehistoric peoples, their culture, and condition as they must have existed in ancient time. The contribution will be illustrated by 120 figures of these antiquities and views of the excavations made in the shell-heaps.

JAPANESE ARCHEOLOGICAL EXPEDITION.—An archeological expedition, composed of seven Japanese, has recently started for central Asia, under the leadership of Count Otani Kozui and Mr Watanabe Tetsushin, says *Nature*. The object of the expedition is to search for the Buddhistic remains in central Asia, India, and China, and to trace, so far as is possible, the course of Buddhism from its source northward and eastward to Japan.

MR W. H. HOLMES, Head Curator of the Department of Anthropology of the United States National Museum, has been appointed Chief of the Bureau of American Ethnology of the Smithsonian Institution to succeed Major J. W. Powell, late Director of the Bureau. Prof. Otis T. Mason, for many years Curator of the Division of Ethnology, has been made Acting Head Curator of the Department of Anthropology in the Museum.

DR GEORGE GRANT MACCURDY has been reappointed Lecturer in Anthropology and Curator of the Anthropological Collection in Yale University. The course in Anthropology is open only to graduate students, five of whom are pursuing it. A course in Prehistoric Anthropology will be offered during the second half-year, and it is expected to be more largely attended than the present one.

FRIEDRICH E. VON TRÖLTSCHE, whose investigations in the early history of Württemberg are highly regarded, died June 29th at the age of seventy-three years.

DR A. F. CHAMBERLAIN of Clark University and Dr A. S. Gatschet of the Bureau of American Ethnology have been elected to membership in the American Antiquarian Society.

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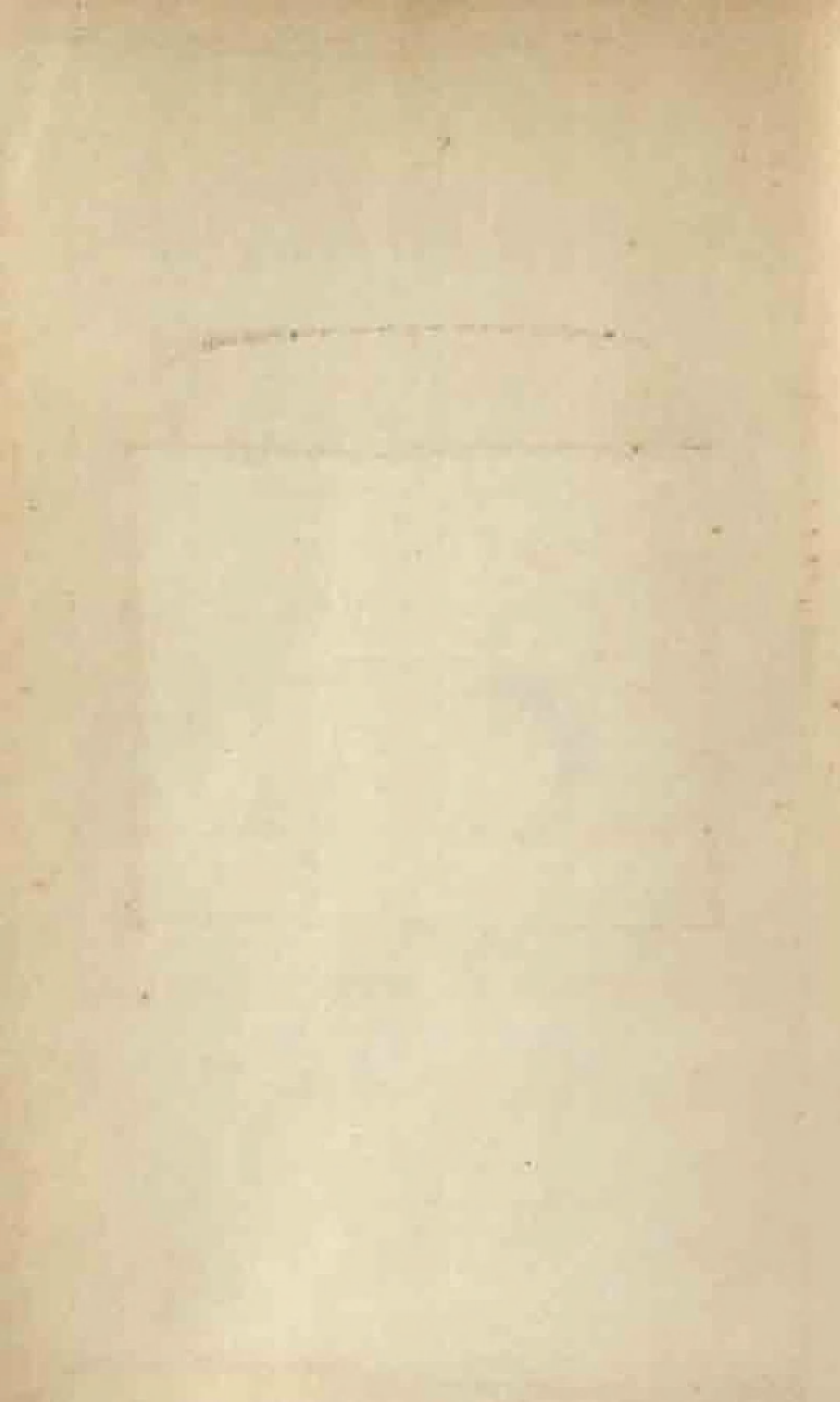
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